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THE

# RETROSPECT

OF

# PRACTICAL MEDICINE AND SURGERY,

BEING

## A Half-Yearly Journal,

CONTAINING A RETROSPECTIVE VIEW OF EVERY DISCOVERY AND PRACTICAL IMPROVEMENT IN THE MEDICAL SCIENCES.

Edited by

W. BRAITHWAITE,

Surgeon to the Leeds General Eye and Ear Infirmary; and Lecturer on Midwifery, and the Diseases of Women and Children, in the Leeds School of Medicine.

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1846.

# PREFACE.

The practical use of medical knowledge consists, generally, in the facility and rapidity with which it can on any occasion be brought to bear on a given case. A man may be able to write an elaborate treatise on any medical subject, and yet, in a case of emergency or complexity, he may be totally unable to bring the stores of his mind into practical application at the moment when he is most in need of his knowledge. For this reason, we have adopted a new plan in the present volume, at the end of which we have compiled a "Synopsis," which will enable the practitioner to avail himself of the most practical indications of treatment which different authors have recommended within the last six months; and we purpose, at some early period, to bring out a more complete Synopsis of this description, embracing all our preceding twelve volumes. If we may judge from our own experience at the bed-side, we think such a Pocket Dictionary of Practical Medicine would be very useful; and, now that so great a variety of methods are resorted to in the treatment of diseases, such an easy book of reference becomes even absolutely necessary, to assist the memory of those who are actively engaged in practice.

Park Square, Leeds,
*June 17th*, 1846.

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SYNOPSIS.

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# PRACTICAL MEDICINE,

&c., &c.

## FEVERS.

ART. I.—ON THE LAW WHICH REGULATES THE RELAPSE-PERIODS OF AGUE. By ROBERT J. GRAVES, Esq., M.D., &c., Dublin.

HAVING noted with much anxiety and accuracy the course of a quartan ague for twenty-seven months, I constructed a table for the purpose of obtaining a connected view of the number and dates of the fits. This table had been made for some time before I discovered that it contained data which authorize us in concluding that the law regulating the periodicity of agues applies not only to the succession of paroxysms, but is extended to the free intervals between them—in other words, that the same law of periodicity which governs the disease while it occasions fits, continues likewise to preside over its latent movements during the interval when no fit occurs, and thus the true periodic rate is carried on, though as in a clock from which the striking weight has been removed, the usual signal does not mark the termination of each certain definite portion of time. This law, now for the first time brought to light, exhibits a new example of the tenacity with which periodicity clings to a disease, when once firmly impressed on it, and recalls to mind a very similar phenomenon observed with respect to the catamenia, which, having been suppressed for many months, not unfrequently reappear on the very day on which the monthly period would have occurred, had no such suppression taken place.

[Dr. Graves here relates the particulars of an obstinate case of ague in a boy eleven years of age. The disease was at length subdued by large doses of quinine, which, it appears, may not only be given without doing harm, but, as in this case, the disease, though complicated, may be cured solely by the use of large doses of this powerful remedy.]

With respect to the manner in which quinine was used, the following observations may be made. At first I gave it in the usual manner, until the particular series of fits ceased; and then persisted in its use for ten days or a fortnight: gradually decreasing the quantity taken. This is the method generally recommended by authors, and it is founded on the notion, that it is necessary where the medicine is given in large doses, not to omit its use abruptly, lest the system should feel the loss of this powerful tonic. My experience in this and other cases, leads me to doubt the accuracy of the reasoning powers upon which this treatment is founded, and I am convinced that in following this rule we defeat our own object, by accustoming the constitution to the medicinal effects of the quinine at a time when the ague fit is absent. The quinine is the proper antagonist of the fit, and while the fits require this medicine, it is borne well by the constitution. On the contrary, when the fits are absent, its curative effects appear to be diminished, and the constitution becomes so accustomed to it, that, when the disease again requires it, the medicine no longer exerts its anti-aguish influence. We have an analogous example in the case of mercury, of which moderate quantities, judiciously exhibited, are sufficient to cure the venereal disease, provided the mercury is given when venereal symptoms are present, and only in the quantity necessary to control these symptoms. If it be given by way of prevention, when these symptoms are not present, or in too great quantity when they are, the system in either case becomes saturated with the mineral, but is not protected from the further ravages of the venereal

disease. The second mode of treatment which I adopted was calculated to avoid the inconvenience already pointed out. This method consisted of giving the quinine for four successive days, and intermitting it for the six following days, thus embracing the interval comprehended in three fits. By these means it was hoped to keep the system sufficiently under the curative influence of quinine while we avoided rendering the constitution too familiar with the medicine; the six-day interval preventing it from becoming saturated by the quinine. This method of treatment seems to have been eminently successful, and under its influence the disease abated in violence, the frequency of the attacks decreased, and the long interval of one hundred and thirty-six days was at last obtained. Finding, however, that, though it had broken the violence of the disease it had not extinguished it, I tried another on the third plan, which was to give no quinine until a well-marked fit or shadow of a fit occurred, and then at once to use the medicine in large doses, so as to stop the fits as soon as possible. The moment this object was accomplished the medicine was omitted, and was not again given until the paroxysms recurred, when they were similarly treated. This, on the whole, appears the best method, as it stops the paroxysms speedily, and keeps the medicine in reserve until they appear.

[Dr. Graves gives a long table to show the different days on which the medicine was given, and the doses. From this table it appears that the dose was varied from ten grains in the day to sixty. At the commencement, the doses each day were fifteen or thirty grains in draughts of five grains, but at last they were sixty grains daily, in doses of five grains each.]

*Dublin Quarterly Jour. of Med. Science, Jan.* 1846, *p.* 59.

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2.—OBSERVATIONS ON AGUE.—By R. Chambers, Esq., M.D., Physician to the Essex and Colchester Hospital.

[A sailor, 18 years of age, came under Dr. Chambers' care at the Essex and Colchester Hospital, in November last, affected with ague. The attack was of fifteen months' standing, was a tertian, but now had become quartan; he had been subjected to a variety of treatment, and said he could not bear quinine. Countenance anæmic; pulse 60; bowels costive; urine scanty; tongue furred; feet and ankles swell towards night; action of heart regular but laboured; a congested state of all the viscera. These were the leading symptoms when he applied at the hospital. He was ordered to be bled immediately, and ten grains of quinine in a draught. Calomel, ext. of colocynth, and ext. of hyoscyamus were given every other night—and small doses of quinine three times daily. This treatment was continued for three weeks, and he has never had an attack of ague since. Dr. Chambers makes the following observations on the treatment of ague by quinine.]

Although the treatment of ague by quinine partakes in some measure of empiricism, we shall find, on examination, that it is based upon correct principles; and that in those cases which prove refractory to this particular treatment, the blame is attributable, not to the remedy, but to our inattention to those principles which we recognise (and which are deemed so essential), in the management of other diseases. It is true that quinine will alone, in the larger proportion of cases, be adequate to the removal of the disease; but in cases of long standing, we meet with congestions of the internal organs, which interfere with, or even altogether forbid its employment; and if these congestions are not removed, we shall be unable to cure the disease, although we may arrest it temporarily.

In a former communication on this disease, I stated that I had experienced unexceptionable success from the use of ten-grain doses of quinine, followed up by smaller doses; and that I had not met with a single case in which, through idiosyncracy, or other causes, I had been prevented giving the quinine. As the case which I have just detailed could not bear the quinine

before he came under my care, I resolved on giving the matter a fair trial. But first let me again mention an outline of the case:—

There was congestion, and consequent inactivity, of all the excretory and secretory organs; the blood was increased in quantity, but deteriorated in quality; there existed that state which Dr. Turnbull, in his lectures in the Lancet, alludes to as anæmic plethora. There was mental and physical depression, in consequence of the long duration of the disease, and its resistance to treatment. It was evident, then, that relief to the congestion was of primary importance; yet his feeble pulse, and his weak and pallid appearance, almost forbade having recourse to depletion; however, all doubt as to its propriety was quickly removed on referring to the heart, from the laboured action of which it was evident that the feebleness of the pulse was merely the feebleness of oppression. Accordingly he was bled to ten ounces, and took ten grains of quinine before he left the hospital, and in addition I directed him to take a glass of gin and water, as he had a long journey to go, and the day was cold. The quinine was continued for three weeks, and during the whole period it did not produce the least unpleasant effect. It is, then, I think, apparent from the result, that the obstinacy of the disease, and the disagreement of the quinine, arose from non-attention to the co-existent visceral congestion.

But to me the case appears to derive its chief interest as an illustration of a rule of practice applicable to this and several other diseases, and one not sufficiently attended to. As an example, I will take neuralgia. It must be familiar to us all to see a case that has been aggravated by iron in the hands of one practitioner, cured by the same remedy in the hands of another, with this difference, that the latter may have prescribed a few blue pills and a saline aperient; nay, more, a remedy may be borne to a certain point, congestion may then arise, the remedy disagrees, and without any effort to remove the congestion, the remedy is condemned, and of course discontinued. Quinine and iron afford daily illustrations of this fact.

[In alluding to Dr. Graves' paper in the preceding article on the relapse-periods of ague, Dr. Chambers thinks the deductions drawn are not warranted by the facts specified, and considers it strange that practical rules for the treatment of this "generally" manageable disease should be deduced from the treatment of a case which lasted two years, and did not yield until 1680 grains of quinine had been administered. Dr. C. asks,]

Is quinine a specific for ague? It is: but only to the extent of being the most powerful vegetable tonic that we possess. Arsenic is just as powerful an anti-periodic, but from its tendency to injure the constitution, it is very properly less resorted to. Iron, zinc, gentian, and several other remedies, denominated tonics, have been used effectually in the cure of ague, and even change of air by reason of its tonic influence has done it. Our object in using quinine in ague is, to obtain its tonic influence on the vascular system. One large dose may effect this, but in consequence of the distended state of the capillaries, we find it necessary to follow it up with repeated small doses, not as Dr. Graves supposes, lest the system should feel its abrupt discontinuance, but to keep up a stimulus to the capillaries till they have recovered their tone. It is a fallacy to suppose, with Dr. Graves, that we ought to discontinue the quinine for fear of weakening its effects, if subsequently needed; for I contend that, if proper precautions are observed in the administration of the medicine, its continuance is the only sure and expeditious mode of overcoming the disease. He resorts to the analogy of mercury, in the cure of the venereal, to support his views; but it strikes me that a closer analogy exists between the administration of wine in the debility of fever, or the exhaustion of hæmorrhage; and let me ask, who would think of discontinuing the wine on the first appearance of reaction in either instance, lest, by continuing its use, it would lose its influence if again required; would they not rather continue it in diminished

doses, or at longer intervals, till by its influence, aided by the necessary auxiliary treatment, the probability of relapse had passed away.

Piorry states that the paroxysm of ague forms but the second link in the concatenation, the first being splenic engorgement; and unquestionably there exists a very close connection between ague and affections of the spleen. And where a person who has resided for a time in a malarious district, removes to a healthy one, and yet becomes attacked with ague, is it not more than probable that it is by an impression made upon the spleen at first, that the disease is subsequently manifested, if aided by depressing causes. We know, from observation, that the blood of those who have imbibed the malarious poison, becomes deteriorated in quality, and is prone to accumulate (probably in consequence of a diminution of its ordinary stimulant quality), in the internal viscera, more especially the spleen. We also know that this splenic engorgement is best treated by tonics; nay, that it is aggravated by the ordinary antiphlogistic treatment.

*Provincial Medical and Surgical Journal, March* 25, 1846, *p.* 129.

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3.—ON THE CURATIVE MEDICATION OF INTERMITTENT FEVER.—By M. Bretonneau.

A sort of drunkenness, more or less painful, produced by a single and suitable dose of sulphate of quinine, repeated if necessary, two days afterwards, suppresses for eight days simple intermittent fever. In the same way that with a person who is in the habit of intoxication, we find that much wine may be taken without producing this condition; so we every day see individuals affected with ague taking great quantities of quinine, without the fever becoming suppressed, or its return being prevented. M. Bretonneau agrees with the Jesuits who first imported cinchona, and learned how to administer it; and with Tarti, who for thirty years practised in the hospital at Tours, that every sufficient dose of bark loses its febrifuge power by fractioning it, exactly as a dose of wine loses its intoxicating property by being divided.

It has been stated that the prolonged administration of many doses, whose sum altogether amounted to several efficient doses, has completely failed. M. Bretonneau has seen a quartan fever, which had resisted two ounces of bark, yield to two drachms of the same medicine; but the two drachms were given at once, while the two ounces were taken in very small quantities at a time, and during fifteen days. Small doses, which habituate a patient to the action of cinchona, injure the beneficial results of adequate doses; they hurt the digestive apparatus, and render the febrifuge intoxication more difficult to obtain.

M. Bretonneau corroborates the statements of Sydenham and Morton—that the dose of bark which has suppressed a paroxysm, if repeated before the supposed epoch of its return, will prevent it; and moreover, that the immunity thus procured may be prolonged by renewed doses exhibited at gradually lengthened intervals, until a permanent immunity from relapse becomes established. The progression recommended in the giving of these preservative doses is the following:—a second dose equal to that which suppressed the fever, is to be exhibited according to the nature of the fever, on any day from the first to the sixth interval, then to be repeated after intervals of 7, 8, 9, 10, 12, 14, 16, 18, 22, 30, days. The best time for giving each preservative dose is immediately after a light dinner; and the first dose had better be given shortly after the decline of the suppressed access, so as to be as distant as possible from the next threatened paroxysm. A relapse will render it necessary to renew the treatment from the commencement. The preservative doses should be approximated if it is found that the *accesses* become more frequent.

From fifteen to twenty grains of the sulphate of quinine, or from three to four drachms of good cinchona, suffice to suppress the fever of an adult, and to keep it suppressed during eight or nine days. Many reasons lead to the belief, that it is useful that the necessary dose should not be exceeded.

*Dublin Hospital Gazette, Dec.* 1, 1845, *p* 119.

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4.—THERAPEUTIC EFFECTS OF NITROGEN IN TYPHUS FEVER.—By John Grantham, Esq.

[Mr. Grantham places great reliance on what he calls diluting the system of fever patients with nitrogenized matters; he has witnessed its beneficial effects. In some observations on this subject, in the London Medical Gazette, alluding to the state of the fluids in typhus fever, he says:]

The blood in typhus fever is very deficient in fibrin and blood corpuscules; in intermittent fever, also, the blood corpuscules are below the normal standard. In typhus fever the albumen is diminished, and a salt of ammonia is sometimes found in the blood. These are all so many evidences of an imperfect action in the laws of assimilation in fever. While in health, in men of strong constitutions, the blood corpuscules are more numerous than in feeble and lymphatic temperaments. Now the red particles of the blood should in health contain 99 parts of ammonia (animal matter), and one of ashes, and if we refer to Dr. Prout's statement in reference to the composition of the staminal principles of the body, we find them to be composed of ultimate elements, in the following proportions:

| | Carbon. | Hydrog. | Nitrog. | Oxyg. |
|---|---|---|---|---|
| Albumen | 50 | 7 | 15 | 20 |
| Gelatin | 47 | 7 | 16 | 27 |
| Fibrine | 53 | 7 | 19 | 19 |

These considerations show the importance of regulating the supply of such elements as will neutralize the destructive action of oxygen in the blood of patients suffering under typhus fever. The necessity for the consumption and reproduction of the blood corpuscules has never yet been disputed, but various theories have been propounded by different physiologists regarding the seat of their formation, and their mode of organic development or metamorphosis. The seat of fever I consider to be the capillary structure; it is in this structure that all the phenomena of secretion and nutrition are performed, and by the superior force of the chemical law over the vital principle. The capillaries are the seat of waste and diminution of structure and power in the body. The latter, as is well known, is an effect universal in fever. If there be one symptom more characteristic than another in fever, it is the wasting of the structures of the body; the wasting always takes place in the order in which oxygen is said to act on the body when not diluted by a due supply of hydrogen or nitrogen.

I assert that ammonia, or nitrogen, is deficient in every structure as a staminal element in typhus fever, that carbon is found in larger quantities than in health in all the excretions. In typhus fever, oxygen acts by accelerating the heart's action, and depressing the nervous influence or vital power. Ammonia acts by stimulating the capillaries of the intestines, is absorbed by the lymphatic glands, and assists in the elimination of carbon from the body, and finally passes off in the compounds of the urine. The kidneys compensate for the defective function of the skin and salivary glands, by discharging matter combined with nitrogen. In typhus fever, I consider it is impossible to alter the duration of the disease. Venous congestion, wherever it may be found, should always be relieved by depletion, either generally or locally, despite of a feeble pulse. After giving a full dose of castor oil, the carbonate of ammonia, with tincture of opium, should be persisted in, viz., ten grains of the former with ten drops of the latter every six hours for an adult, until the return of cerebral action, or cessa-

tion of stupor with delirium, and no longer, as at that time, aperients with quinine appear to be indicated. Friction to the skin with hot lard after ablution with warm water (96 degrees Fah.) is of the greatest benefit; as oil is absorbed by endosmosis through the veins without immediately reaching the blood; when imbibed, it combines with the albumen of the plastic constituents to form cells, which pass into the veins, and serve for the nutrition of the body, and also to regulate the animal temperature. Dr. Willis read a paper before the Royal Society, "on the special functions of the skin," wherein he showed the influence which the dissipation of a certain amount of simple water by the sudoriparous glands exerted upon the current of blood returning from the peripheral parts of the body to the heart, and insisted upon this as the means by which venous endosmose or absorption was chiefly secured, showing the power of absorption and exudation in that structure.

In reference to diet, I consider water as the first and most important requirement of the blood, in consequence of the great evolution or production of carbonic acid; secondly, good beef tea, highly seasoned with spices and salt, with barley water, or gum water; this diet to be given during the exhibition of the ammonia and opium; when quinine is indicated, then I would recommend port wine in addition to the above diet, and gradually return to a solid diet. On a general review of the foregoing observations, the most prominent symptom in typhus fever appears to be waste of the structures of the body, not simply attributable to the superiority of chemical over the vital action, but to more remote causes, namely, the quality of the air respired, and the quality and quantity of the food digested (as abstemiousness in animal food is considered beneficial by those whose experience has been great, especially in tropical climates: they observe, that the less the inhabitants partake of an animal diet, the more exempt are they from fever); and the question arises, are these causes acute or chronic? I should say, decidedly chronic. It appears impossible to conceive typhus fever occurring suddenly when the blood is in a healthy state and the brain active. Experience fully attests the languor and debility of the system during the premonitory symptoms of typhus fever.

[Most medical men know the value of sesquicarbonate of ammonia in typhus, but for our own part we should be careful how we combined opium with it, as described by Mr. Grantham.] *Med. Gaz., Dec.* 12, 1845, *p.* 1426.

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5.—TYPHUS FEVER.—By Dr. Corrigan, Dublin.

Let us, as we stand at the bed-side of a patient in typhus fever, recollect that in looking at the extent of the maculæ, or for the presence of petichæ, or examining the distended vessels of the conjunctivæ, we are looking not at a mere local derangement, but that we are studying in these external indications the state generally of the circulatory system as a whole. In this view we can understand why we attach importance to the colour of the maculæ, why we look upon rose-coloured maculæ as a good sign, and dark coloured maculæ as indications of danger.

The dark coloured maculæ are indications of danger, because their colour is owing, we know, to an enfeebled circulation. The feebler it is, the darker will be the colour of the maculæ; while the more energetic is the capillary circulation, the more vivid will be the colour of the blood passing through it. In this view we can also find an explanation of the fact, that a patient may have an intellect not disturbed, may have a cool skin, a clean tongue, a soft abdomen, a pulse not above 70 or 80, with volition and sensibility perfect—and yet die of typhus fever in seven or eight days. Of what does the patient die in such a case? He dies of this lesion of the function of circulation. In most cases this lesion is not the only *one present,* although often the most prominent; but I wish to fix attention

on it in this that I may call an analytic view of fever, as it leads to a practical rule for the administration of one of our most important agents in the treatment of fever, viz., wine. You are too often bewildered in the directions as to its employment. You are told to beware of delirium in its administration, and yet, again, you read that delirium subsides under its use. You read instructions either to refrain from its use when the tongue is dry, or to judge of the propriety of continuing its exhibition by its effects on the tongue. Instead of attempting to reconcile all the contradictory statements, and, too often, inexplicable advices, that are laid down for you, turn from the books to the living book—the patient—and read from him. Ask yourself what is it in typhus fever you prescribe wine for? Is it for delirium? No. Is it to prevent its approach? Again, no. Do you give it for a dry tongue? Certainly not. What is it that, as you consider a patient's state, would lead you to think of its employment?—is it not the state of the function of circulation, taken as a whole, indexed to you by the pulse, on the one hand, and by the state of the capillary system of circulation in the skin, on the other.

It is for this you give it. It is the specific remedy directed to remedy the general lesion of the function of circulation, and hence in its administration you may give it, and you must give it, whether there is or there is not delirium; for delirium may be present or absent in a case requiring its exhibition for the function of circulation. You should give it indifferently, whether the tongue is moist or dry; for the tongue may be either, and yet wine may be required; and hence the tongue becoming moist is not an indication that you may dispense with its use—nor its continuing dry, a sign to make you discontinue it. You may give it with a soft abdomen, or with an abdomen tympanitic, for similar reasons. You are giving wine, recollect, as the specific remedy for the lesion of the function of circulation (remember always comprising under this the capillary and cardiac circulation); and by the change in the circulation, and by this alone, are you to judge of the necessity of continuing, decreasing, or augmenting its dose. Under its exhibition, you will see the vessels of the conjunctiva contract, the maculæ become rose-coloured, and the patches of skin in the face, and on dependent portions of the body, lose their dark livid hue. Keep this, then, in mind, the lesion in fever for which you give wine, is the lesion of circulation, and if this function from debility require it, you must give it under all circumstances of derangement of other functions. Of the quantity required, it is quite impossible to lay down any rule. No two cases will have exactly the same amount of depression of circulating energy; no two cases will require precisely the same amount of wine. In some cases, four to six ounces are enough for a few days, in continuance, to restore the circulation to sufficient tone; in other cases it requires as much as one ounce of wine every hour, or 24 ounces in 24 hours; and even in addition to this, as much as eight ounces of brandy; and all this barely sufficient to preserve the circulation from sinking.

We must never abandon a case of fever, as long as there is life; we must remember what the post mortem of the case of Redmond tells us, that in its present form there is no structural disease; that the patient, even in the dying moment, is sinking from a mere lesion of function, and that even then, recovery is not hopeless; and we must recollect what clinical observation of several cases even now under our own observation in the hospital tells us, that the patient one day, in a state seemingly moribund, may on next day, or within twenty-four hours, be out of danger. It will not unfrequently happen, that even the power of swallowing is lost for several hours; that a small portion of brandy or wine can only be got down by raising the patient in bed, throwing spoonfuls of brandy into the pharynx, and then holding up the patient's head until it descends to the stomach, apparently almost by its gravity. Even thus it sometimes cannot be passed along to the stomach, but even then we can stimulate the circula-

ting system by injections; and in some cases which you have seen, I am confident the preservation of life has been owing to æther, given in the form of injection every two hours, in quantities of two drachms, until under its stimulating effect the circulation gained some vigour, and the power of swallowing returned.

With the same object of stimulating the capillary circulation, blisters are applied in succession over the surface. The nurse is supplied with four or six small blisters; one after another is applied, with intervals of six hours between them, over chest, abdomen, thighs, and legs. They are thus applied, not as counter-irritants, not to act as derivatives on internal structural disease, but as stimulants to excite the capillary system. An action produced in any part of it, will be conveyed through the whole, and thus their action on the skin coincides with and assists the action of the internal stimulus of wine, ammonia, and brandy.

*Dublin Hospital Gazette, March* 15, 1846, *p.* 230.

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6.—REMARKS ON THE PATHOLOGY AND THERAPEUTICS OF TYPHUS.—By Dr. Richter.

Dr. R. considers that the nervous symptoms in typhus are not dependent on the morbid changes in the mucous membrane of the intestinal canal, for he has observed them before degeneration of that tissue had commenced, and vice versa, they have disappeared before the membrane had recovered its healthy state; and, moreover, there are other diseases where the intestinal membrane becomes degenerated, and nervous symptoms are not present during any part of their course. The nervous symptoms of typhus depend much more on defective nutrition of the organisation generally, as well as of the nerves in particular. This is confirmed by the etiological conditions of the disease, such as those which exert an influence on soldiers in the field, particularly mental depression, grief, care, exertions causing physical exhaustion, and food deficient in quantity and improper in quality. The connection between the nervous symptoms and defective nutrition is also confirmed by the facts that death from starvation exhibits all the nervous symptoms of typhus, and the injection of putrid organic matter into the veins has a similar effect. Further proof of this connection is borne by the physiological and chemical researches of Andral and Gavarret into the nature of the typhoid state. As a consequence of this condition, the proteine (i. e., the albumen and fibrine) and the fatty matter become absolutely diminished in quantity, while the blood-corpuscles and alkalies are relatively increased. Inasmuch as in typhus the fibrine is absolutely diminished, a much less quantity of it passes into the lungs for oxidation, and, accordingly, the organic metamorphosis going forward with less intensity, the debility and weakness of the patient becomes manifest. The deficiency of the oxide of proteine, as the author satisfactorily proves, is brought about in this way, too few blood-corpuscles (by means of which the organic acids and acid salts are formed from the decomposed organic substances in the venous blood) are set free to be converted by the process of respiration into fibrine. Hence, there is not enough of oxide of proteine taken into the organs as is necessary to compensate for the organic matter decomposed. The quantity of the decomposed organic products is in proportion to the quantity of acid produced in the lungs; and hence, too, the solution of the blood-corpuscles and the formation of fibrine is in equal proportion. Hence, one of the chief symptoms of the typhoid state, viz., diminution of the biliary secretion, becomes evident. According to Schultz and Hunefeld, the bile is composed of some of the products of the decomposition of proteine, compounds of fat, the decomposed envelopes of the blood-corpuscles, and hematosine. But as now these products of decomposition are present in too small a quantity, and the fat, before it arrives at the liver to form bile, is destroyed by the excess of oxygen, so it is clear that the bile

must be secreted in too small a proportion. What, then, does nature do to effect a cure? She excites a febrile state, so as by means of an increased rapidity of the circulation and respiration to hasten the oxidation of the fibrine in the typhous blood to form a larger quantity of the oxide of proteine. To give nutritive diet to a person in this state is to increase the disease, because the food must first be converted into chyle, and that into blood-corpuscles; but here the organic metamorphosis stops, no fibrine being formed. The indication in the treatment is to produce fibrine, and this can only be done by means of substances which favour the metamorphosis of the blood-corpuscles into a fluid plasma. According to the experiments of Hunefeld, chlorine exerts the most powerful action in the solution of the envelopes of the blood-corpuscles. On the decomposition of the envelope, the nucleus of the corpuscle, the true representitive of fibrine, remains undissolved; but this result, according to Hunefeld and Muller, may be brought about by the salts of ammonia, the carbonate or phosphate. Hence, it is without doubt clear, that the alternate exhibition of chlorine and ammonia, as employed by the author to produce the oxide of proteine, which was intended to cause the metamorphosis in the capillaries necessary for cure, strongly supported the struggles of nature to effect recovery. According to the author, calomel, given from ten grains to scruple-doses, has a similar effect. The chlorine is exhibited in the form of c. oxymuriatic acid.—*Casper's Wochensch. No.* 11, 12, 1845.

*Northern Jour. of Med., Jan.*, 1846, *p.* 47.

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7.—A NEW CONTAGIOUS DISEASE.—Reported by GEORGE IRELAND MILLS, Esq.

[As many as seven members of one family residing in the neighbourhood of St. Pancras, London, became attacked with disease in the course of one month. Three of them, young men, were admitted into the Middlesex Hospital, two of whom died there. The mother attributed their illness to the stench from a drain or sewer in the neighbourhood of her house, and at the inquest held before Mr. Wakley, the resident medical officer of the hospital, Mr. Corfe, attributed their disease either to a poisonous animal effluvium, or to the poison of bad meat. This gentleman, in giving his evidence stated that]

The symptoms of the three patients in the wards were so exactly similar that to describe one was to describe all. Each brother had suffered from extreme difficulty of swallowing, in consequence of great swelling around the jaws and throat, depriving them also of voice. One of them (John) was quite deaf from the swelling; and there was in each perfect constipation, and an excessively fœtid discharge from the nostrils and mouth, such as he had never seen before, excepting in a case of human glanders. Soon after admission, a pustular eruption broke out all over the bodies of William and Henry, especially at the nates and rectum.

In each case the pulse was under 100, and quite of a natural character; no febrile nor constitutional irritation, in fact, existing in either patient. Excessive hunger, the utmost craving for animal food, chops, and steaks, and for porter, beset them. Leeches were applied to the jaws, ice was constantly kept on the throat and mouth, wine and beef-tea were ordered, and the chlorate of potash was given internally. In a week the knees, elbows, and wrists became red, swollen (not swollen, however, in Henry), and very painful; but although purulent matter collected in those joints, there were no symptoms of phlebitis. At the post-mortem examination of William, who died on the 13th, both knee-joints, and the wrist-joint on the right side, were found filled with thick purulent matter, and a large collection of purulent matter was discovered in the body of the muscle of the left arm. No evidence of phlebitis existed. The larynx, the windpipe, the upper part of the œsophagus, and the gullet, were extensively ulcerated, presenting

extreme redness of the whole lining membrane, extending as far as, and stopping at the stomach and lungs respectively. No morbid appearance, nothing unusual, was found in the stomach; but that organ being passed, the duodenum exhibited remarkable transverse ulcerations, eight or ten in number (such as are seen in poisoning with arsenic, or corrosive sublimate), taking the course of the valvulæ conniventes, completely destroying the texture of the valves, looking, for instance, "as though rat-eaten," so totally were they gone. Yet the mucous membrane of the stomach was perfectly healthy. Some trifling depositions of pus were found in the windpipe, and a few ulcerations about the gums. At the back of the throat a slight swelling was found, but not sufficient to account, in William, for the difficulty of swallowing. The body was greatly emaciated. All the patients were perfectly sensible on admission, but delirium came on twenty-four hours before death. The only case of which Mr. Corfe had ever read, at all resembling these, was one described in Arrowsmith's analysis of W. Horn's essay on the "Sausage Poison," quoted in Dr. Christison's "Treatise on Poisons," from page 638—of which latter work he quoted the following passage, tending, as he (Mr. Corfe) considered, to qualify any suspicion which might have been entertained, that the present cases came under the denomination of human glanders:—

"The symptoms of poisoning (with animal matters rendered poisonous by modified putrefaction) seldom begin until twenty-four, or even forty-eight hours after the noxious meal, and rather later than earlier. The first symptoms are, pain in the stomach, vomiting, purging, and dryness of the mouth and nose; the eyes, eyelids, and pupils then become fixed and motionless; the voice is rendered hoarse, or is lost altogether; the power of swallowing is much impaired: the pulse gradually fails, frequent swoonings ensue, and the skin becomes cold and insensible. The secretions and the excretions, with the exception of the urine, are then commonly suspended, but sometimes profuse diarrhœa continues throughout. The appetite is rarely impaired; fever is rarely present; and the mind continues to the last unclouded. Fatal cases end with convulsions and oppressed breathing, between the third and eighth days. In cases of recovery the period of convalescence may be protracted to several years. The chief appearances in the dead body are, signs of inflammation in the mucous membrane of the alimentary canal, such as whiteness and dryness of the throat, thickening of the gullet, redness of the stomach and intestines; also croupy deposition in the windpipe; great flaccidity of the heart; and a tendency of the whole body to resist putrefaction."

His (Mr. Corfe's) opinion on the nature of these cases and their origin, was, "that the disease was produced by an animal, and not a vegetable, poison, making a marked distinction between the two sources of the disease. It may have been produced by poisonous meat—diseased pork, for instance—by the carbunculous matter of such meat, but whether eaten or respired in the form of effluvium he could not say. There was, he considered, no mystery in the cases as regarded the cause; not the slightest doubt existed in his mind, or in the minds of his colleagues, after having watched the cases from the day of their admission, and attended the autopsy, that the cause of the disease was poisonous animal matter, either respired or eaten."

The coroner did not assent to this opinion.

The inquest being adjourned, the coroner visited the house, but could discover no reason to suppose that any effect could be produced upon the health of its inhabitants from the drains in the neighbourhood: this was not stated by the coroner at the inquest, but was an inference drawn by Mr. Mills after examining the premises. The body of Henry Lambert, who died last, was examined, and extensive ulcerations, with depositions, were found on the edges of the larynx and glottis, and in the ventricles of the larynx and pharynx. As it was arranged that the medical men who had attended the other members of the family should appear at the adjourned inquest in order to

give their evidence as to the nature of the disease, Mr. Corfe declined giving further evidence, until they should have been examined. The result was, that his opinion became somewhat modified; he now doubted whether the disease arose from poisonous animal matter, although he still ascribed it to a poisonous effluvium of some kind or other; he could not give a name to the disease.] *Lancet, Dec.* 6, 1845, *p.* 613.

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8.—ON THE TREATMENT OF SCARLATINA BY THE ACIDUM ACETICUM DILUTUM.—By ISAAC B. BROWN, ESQ.

[When called to a case of scarlatina, in its early stage, when the skin is beginning to show the efflorescence, and the tonsils and fauces are also of the same scarlet blush, Mr. Brown applies caustic, in the stick, to them—and has the throat rubbed with liniment containing camphor, soap liniment, and laudanum; or warm poultices where the skin is too irritable to bear the liniment. Then, he adds,]

As soon as the bowels are relieved, I give to a child under three years of age, the following mixture:—Take of diluted distilled vinegar, two drachms; syrup, four drachms; distilled water, two ounces; mix and take a fourth part every three hours. And in proportion to the age increasing the quantity of acetic acid: and after fifteen, I give two drachms as a dose, and gradually increase it in proportion to the degree of fever. I mean by the dilute acid, that which is made of one part of the acetic acid of the pharmacopœia to seven parts of distilled water:—as, ℞. Distilled vinegar, one part; distilled water, seven parts. I desire the patient never to be removed from bed, and inculcate the necessity of maintaining an equable and cool temperature of the body, by keeping strictly to the one room where the fever first shewed itself.

I never allow the night clothes to be removed during the efflorescence; and believing the most effectual way to save my patient to be, strict attention to the tonsils and fauces, I apply once, twice, or thrice during the day a solution of caustic. (Nitrate of silver in the proportion of ten grains to one ounce of distilled water.) The application is effected by tying a small piece of sponge on the end of a black lead pencil, or a thin piece of stick, dipping it in the solution, pressing down the tongue with a spoon, and sponging the tonsils and fauces thoroughly, removing all that peculiar viscid phlegm which is so marked in this disease; the relief this gives the patient is most striking: the respiration, which was most difficult and short before, now becomes free and full; the pulse soon partakes of the benefit, and the countenance is relieved from anxiety and distress, and assumes a more cheerful appearance; deglutition, before difficult and almost impossible, becomes comparatively easy, consequently nutriment can be readily given; and I again repeat, that I lay great stress on the judicious and careful administration of nutriment.—*Northern Journal of Medicine, January*, 1846.

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## DISEASES OF THE NERVOUS SYSTEM.

9.—A TREATMENT OF INSANITY AND NERVOUS EXCITEMENT.—By JOSEPH WILLIAMS, Esq., M.D.

[Dr. J. Williams strongly recommends the use of narcotics and other remedies calculated to produce sleep, not only in order to put off, but even to cure an attack of mania. He observes that]

Some of the mildest cases which occur, where there is preternatural excitement with vigilantia, are those of persons having over-fatigued the mental powers by continued application, more especially if confined to one subject; and the ill-effects seem to be produced more frequently in those

whose hopes and fears are in addition adding to the excitement, as is often noticed in junior barristers and students at our universities.

Now, in such instances, if a young man apply early, the case is usually cured very rapidly, sometimes even within twenty-four hours; if passed over for a few days, recovery is retarded, and if totally neglected, phrenitis or mania by no means unfrequently ensues. In such cases there is a great action, which is but too frequently mistaken for power; the pulse is quick, perhaps 100, 120, or even more, tongue white, face flushed, throbbing and heat of the temples, rolling, sparkling, and injected eye, rapidity of speech, and everything showing great excitement; now this description is not sufficient to guide us as to the treatment, for all these symptoms may depend on excessive nervous irritation, but more attention must be given to the pulse; if the pulse, in addition to being quick, is also full, hard, and bounding, and if the skin is dry and hot, then the abstraction of blood, both general and local, will usually be necessary, and often within an hour or two after depletion, the skin becomes moist, and the patient falls asleep. But what I am the more anxious to particularize, is the opposite condition, where bleeding is unnecessary and unsafe. Supposing the pulse to be quick, soft, and fluttering, weak or intermittent, the skin moist and clammy, and yet the excitement just as decided as in the other case, to bleed here is most improper, and many cases of insanity have arisen from such practice. The judicious administration of a narcotic will frequently act as a charm, and we have often found the following prescription very useful:—

℞. Tr. Hyoscyami ♏ xxx.; Tr. Humuli 3ij; Camphoræ gr. v. ad. x. aut. xv.; Syr. Auranti 3ii.; Mist. Camphoræ 3vj.; M. et fiat haustus, h. s. s.

This has often caused calm and refreshing sleep; and the patient, who has previously passed two or three nights with great restlessness and watching, feels himself invigorated, and receives his medical attendant with the greatest gratitude.

[Amongst the remedies for procuring sleep, Dr. Williams notices bleeding. This should not be adopted, unless demanded by very urgent symptoms, lest the constitution should not be able to rally. He remarks here, that]

A very efficient way of relieving head symptoms, when dependant on visceral congestion, more especially of the liver, is applying leeches to the rectum, and if considered necessary, subsequently placing the patient in a warm bath; a large quantity of blood may be lost in this way without producing much prostration. Many cases of insanity arise from extreme irritability dependent on prostrated power; and to support this power by good nutritious food, and sometimes even with brandy and wine, at the same time soothing the system by procuring refreshing sleep at night by morphia, will speedily evidence the advantages of such treatment.

The great error originally was, allowing the powers to sink; it is of the greatest importance that these powers should be supported—the nervous excitation must be calmed. In these cases, mistakes are but too frequently made; irritation is confounded with inflammation. The maxims so ably taught by Mr. Travers are forgotten; the object being to calm the action, not to diminish the power—this nervous power being much more easily depressed than raised. Should this advice be neglected, and bleeding be ordered, stupor, or coma, or confirmed mania may be the consequence. In many cases where there is the most ferocious delirium with great muscular power, yet where the pulse is very quick, weak, and fluttering, even the slightest depletion at once knocks down the powers; and even if the patient should again rally, there is great danger of his becoming idiotic. As Dr. Marshall Hall has so truly stated—under irritation, exhaustion is sooner produced than in health; while under inflammation, the system bears loss of blood, with less exhaustion than in health.

When a patient is in a highly excited state from loss of blood, a full dose

of opium is the best medicine we can employ, and it is often successfully prescribed in that highly nervous state so closely resembling mania; and if, when that excessive restlessness occurs which precedes puerperal mania, a full dose of opium be given, such as 1 gr., 1½ gr., or 2 grs., this formidable disease may be often prevented, and as a prophylactic, opium may be considered invaluable. In some instances Dover's powder, or morphia, may be preferred; but generally the opium itself is more valuable in these cases of exhaustion. Anæmia of the brain, so strongly pointed out by Dr. G. Burrows, has been but too little regarded until lately. Many cases where there is great action, require stimulants and support; thus, in the case of a young man, æt. 44, [!] mentioned by Abercrombie, there was at first great depression, want of sleep, with incessant talking: reaction took place, excitement increased, pulse 160, continued talking, and obstinate vigilantia; yet stimulants were here required, as after death no traces of inflammation could be found.

[Purgatives may procure sleep, by diminishing vascular action, where bleeding is inadmissible. Narcotics, when given in insanity to procure sleep, should be administered in full doses. Dr. Williams says on this point]

It is impossible to limit the extent to which opium may be required; but in stating that a full dose is necessary, from two to five grains may be considered a large dose for most constitutions; where habit has impaired its effect, one and even two drachms of solid opium have been taken in a very limited period. Pinel knew 120 grains of opium given in one dose to a patient suffering with cancer of the uterus; and I have seen a wine-glassful of laudanum taken at a draught, and this has been repeated three times daily for months—such cases, however, necessarily form the exception.

Dr. Burrows has never ventured beyond five grains, and generally begins with three grains, repeats one grain every two or three hours, never allowing it to exceed twelve grains, when, if sleep have not resulted, he desists. This must be admitted as a far safer practice, than to give fifteen grains or two scruples for a dose, as advocated by some. If prescribing opium to a person not habituated to its influence, the second dose should be smaller than the first, by combining it with calomel or antimony, or James' powder, it does not so much disturb the usual secretions; there are cases where Dover's powder, and occasionally even the pulv. cretæ comp. c. opio may be necessary. It is well to remember that when opiates are indicated in cases of insanity, the dose must be large. Combining opium with camphor or henbane or digitalis, will often be very judicious. With tartar emetic, calomel and opium in large doses will often calm the system when there is great restlessness and fever, especially if the head be kept cool. Opium should never be omitted where insanity has succeeded constant intoxication; and in those cases where the countenance is exsanguined, with a cold clammy skin, it is especially indicated, and is no less useful in that anæmial state of the brain where there is great exhaustion, in whatever way produced.

Where there is constant vomiting, opium may be administered in an effervescing draught. Opium is now rarely ordered from day to day as formerly, having given place to the preparations of morphia, but should it be considered necessary, it will be advisable to combine it with some aloetic preparation. The infusion of opium with a bitter, as recommended by Dr. Paris, will secure the narcotic principle without interfering with the intestinal secretions. If opium be ordered solely as a hypnotic, it should not be in combination with aromatics, as is the case with black drop; for although this preparation is stronger than laudanum and decidedly more anodyne, yet its narcotic power is considerably diminished, while its stimulating effects are augmented.

The liquor opii sedativus is undoubtedly much milder in its effects, and less stimulant than laudanum, and many years ago I made it the subject of

experiment, in order personally to determine as to its efficacy, and I found it more uniform and certain in its effect, while it did not cause the disagreeable waking symptoms so often noticed when an opiate has been given. Many persons who slept well with it, passed a restless and uncomfortable night when laudanum was substituted for it. Battley's solution has been of the greatest service, and I believe it to be surpassed by no preparation, except the hydrochlorate of morphia. When opium has disagreed with a patient, a strong cup of coffee will often remove the unpleasant effects.

Administering an opiate in the form of enema renders it much milder, and at the same time secures its sedative and narcotic influence, without producing that headache, sickness, and dryness of the fauces, so often complained of when opium is taken by the mouth. Dr. Burrows has found it induce sleep, soothe and relieve delirium, when, if administered by the mouth, mania would have become worse. The French, who use enemata more than ourselves, are very much opposed to introducing opium in this manner; this is somewhat singular, as the effects are generally milder than when taken by the mouth. This is a good plan of administering medicines when patients obstinately refuse to take them.

If narcotism be highly desirable, and neither of these modes seem practicable, rubbing the abdomen with laudanum and oil will sometimes be found effectual. This practice was adopted by Whytt; when he found a patient could not bear laudanum, he ordered three or four tea-spoonfuls to be rubbed over the stomach and belly; this, if necessary, he repeated every six or eight hours. He also mentions the case of a woman who suffered from vigilantia and took opium internally; and a solution of opium in spirit of wine was often applied to her head and neck, and always gave her ease. Mr. Hill found, when there was disturbed sleep, rubbing the head with lin. camph. fort. ℥ss. of opium to each ounce, was no contemptible auxiliary in procuring rest; and opiate frictions were insensibly used and strongly recommended by Dr. Chiaragi of Florence. These narcotic frictions over the head will be often found useful: even brushing the hair with a common hair brush for half an hour, will frequently tranquillize a nervous and irritabte patient. In some cases it may be necessary to rub the scalp with liniments, or ointments, containing morphia, belladonna, veratria, or aconitine.

*Morphia.*—Where opium disagrees, morphia will often be useful: it has been found that the narcotine of the opium causes many of those distressing sensations of which patients complain who have been under its influence. The acetate was the first preparation of morphia introduced, and was largely employed with great satisfaction; still, however, it was noticed, especially when a large dose had to be prescribed, that peculiar spasmodic effects ensued; and the hydrochlorate having been subsequently tried, was found immediately to produce its direct calming and sedative effect, without the distressing jumps and twitchings so often noticed when the acetate had been taken: and general experience now fully proves that morphia may be given without producing that headache, dryness of fauces, vomiting, and subsequent distress, not unfrequently caused by opium, so that when this disagrees, morphia may be tried with more than probable success. Another great advantage of morphia is that it may be continued daily for weeks and even months undiminished in effect, without increasing the dose, and without producing any disagreeable or troublesome symptoms, when, if opium had been thus administered, dementia or idiotism would have probably ensued. The hydrochlorate stimulates less than the acetate, and is the most valuable remedy we possess for calming excessive excitement.

*Digitalis* was employed by Dr. Cless, of Wurtemberg, in delirium tremens, in full doses repeated every two hours. He says, that when narcotism occurred, recovery followed.

*Hyoscyamus* has in numerous cases special advantages. It is much less

apt to produce bad dreams than opium; it has no tendency to induce constipation; it increases the renal and cutaneous excretions. Its calmative and tranquillizing effects even when it fails to cause sleep are most admirable. Opium in combination with hyoscyamus is often rendered much milder and more uniform in its action. With camphor, henbane is very useful in producing sleep and tranquillizing the irritability of the insane, and has been recommended by numerous authorities. Some are in the habit of giving five grains of each every four hours; but Dr. A. T. Thomson prefers one large dose of ten grains of each, to repeating smaller doses. From v. to x., xv., or even xxx. grains of the extract may be given at once; when necessary to be repeated, from gr. v. to gr. x. may be considered an average dose. If an over-dose be given, it may occasion stupor, vertigo, convulsions, and even coma. It will here be necessary to give a caution as to exhibiting henbane as an enema; several fatal cases have resulted from this indiscretion; and therefore it should never be given in this form.

*Camphor* acts first as an excitant, the heart's action is increased, blood is thrown to the surface, diaphoresis succeeds, the pulse then falls, and sleep follows; owing to its diffusibility it acts more rapidly than other narcotics. If given in small doses, it acts only as a stimulant, and it is with such intention Dr. Sutherland combines it with myrrh in cases of debility. From ten to fifteen or twenty grains must be given to produce its sedative effect; if half a drachm be administered, it acts very powerfully as a narcotic, and is often found very useful in calming delirium. It may be necessary to combine it with opium, hyoscyamus, digitalis, nitre, ipecacuanha, or antimonials; the choice of course depending as particular symptoms may indicate. In camphor, as with hyoscyamus, although acting for a short time as an excitant, yet a calmness speedily succeeds, and the pulse falls. These two combined will often lower the pulse in mania considerably, and Dr. Hallaran considered if it did no other good, it reduced the febrile diathesis.

*Belladonna*, by diminishing the sensibility of the nervous system, may cause sleep in maniacs. Some physicians, however, object to its employment, believing that patients often awake from the slumber which it induces, more troublesome and violent than before. As illustrating the beneficial effect which may sometimes be obtained from its endermic administration, the following case is quoted. A publican, aged 36, an habitual drunkard, subject to attacks of delirium tremens, was visited by Mr. Flood, of Leeds, who found him with the usual symptoms indicating delirium tremens; pulse 100, weak and irritable, tongue clean, urine scanty, dark, and offensive, blood voided in large quantities by stool; insomnolent for a week. Head to be shaved; twelve leeches to temples; cold lotions; strong purgatives till bowels relieved. Within eight hours the bowels had been freely emptied; pulse 100, no sleep, great restlessness and agitation. The hydrochlorate of morphia in two-grain doses, subsequently increased to ten grains, with one grain and a half of tartar emetic, also increased to eight grains, were administered every two hours, with two table spoonfuls of the following mixture:—℞. Ammoniæ sesquicarb. ℈ij; tr. opii ℥i. (subsequently increased to ℥i.); mist. camphoræ ℥viij; m. ft. mist.

The next day no improvement; no sleep; cupped to eight ounces; narcotics increased. Has been gradually getting worse up to the seventh day of attendance. Hyoscyamus, opium, and morphia, in every form, with digitalis and antimony, cold affusions, and his usual stimulus, all have failed—pulse 110, weak and irritable—ungovernable.

*Eighth day.* Bowels have been well cleared by castor oil, and a blister has been raised between the scapulæ. The cuticle was stripped off by Mr. Flood to the extent of three inches by two inches, and covered by a layer of pure extract of belladonna. It excited acute pain, which subdued his previously boisterous condition; the pain ceased in three minutes; in five min-

utes, twitchings of arms and facial muscles; appeared intoxicated; the pupils, before contracted, in seven minutes became fully dilated; drowsy. In nine minutes the belladonna was removed, the patient being in a profound sleep, which continued for seven hours, neither disturbed nor stertorous. The pulse was at first 110, small and irritable; in five minutes 140; in twenty minutes 160; it then gradually fell, and in six hours it was 108, full and soft. He awoke quiet, but very soon became excited.

*Tenth day.*—Has been watchful since last report; opiates have produced no effect; apparently sinking from prolonged excitement. Another blister to be placed rather higher up than the former. Belladonna again applied; sleep followed in twenty-six minutes, which lasted four hours and a half; he awoke perfectly subdued, pulse having fallen to 70; passed a tranquil night, although without sleep; and after this gradually convalesced.

Antiperiodics.—Insanity is somewhat periodical; and it should be remembered, that, when it is intermittent, it is not inflammatory, and in such cases, arsenic, tr. ferri sesquichloridi, the preparations of zinc, and copper, with tonics, may be often usefully prescribed. Arsenic can be strongly recommended in these cases, and has been given with the greatest advantage; it appears to alter the sensibility and irritability of the brain. Quinine is sometimes given with the same intention; thus, a case of insomnolence was cured by giving gr. vj. of quinine at bed time. M. Barbier of the Hotel Dieu, Amiens, ordered it, because every evening there was nervous agitation with pain, occurring *periodically*. Quinine was given two nights, the patient slept well—omitted, no rest—when again administered, six or seven hours of sound sleep followed. Quinine may be useful in many other cases—it acts very powerfully on the nervous system, as is proved by those temporary cases of blindness and deafness not unfrequently caused by large doses, especially when continued for a lengthened period.

The Douche, the author most properly remarks, should never be resorted to, except when imperatively necessary; and the application of the ice-cap will generally be found far more efficacious.

Our object is to keep the head cool—and not to make it suddenly cold, and then suppose that we have done enough. If this be not kept in view, we may have strong re-action—and mischief, in place of good, through the injudicious mode of employing one of the most efficacious and certain remedies which can be resorted to in certain cases.

*Monthly Jour. of Medical Science, Dec.* 1845, *p.* 912.

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10.—THE ACTION OF DIFFERENT DRUGS UPON THE MENTAL FACULTIES. —By M. Otto.

Each drug, besides its general and special action upon the organs of the body, exerts at the same time an action upon the mental faculties. The stimulants increase to a greater or less degree the quantity of blood which flows into the brain in a given time; as a consequence of this, the whole brain is excited, provided the stimulation does not exceed a certain limit; but the local excitement differs according to the different stimulant employed. Thus, ammonia, musk, castor, wine, and ether increase the powers of imagination and perception; the empyreumatic oils cause peevishness, melancholy, and visions. Phosphorus acts upon the generative functions; so also does iodine, and at the same time induces sadness. Cantharides excite, and camphor diminishes the sexual propensity. Arsenic causes melancholy; gold, hope; mercury, increased sensitiveness (mental); and carbonic acid gas, placidity. Among the narcotics, opium stimulates the sexual desires, the intellectual powers, and the imagination. Belladonna dulls the mental faculties; hyoscyamus causes moroseness, jealousy, and violence; cicuta weakens the understanding; digitalis diminishes, and saffron increases the sexual desires; canabis causes calmness; and amanita muscaria, courage; tobacco operates in the same way as opium.

*Northern Jour. of Med., March,* 1846, *p.* 179.

11.—DELIRIUM TREMENS.—By Dr. CORRIGAN, Physician to the Whitworth and Hardwick Hospitals.

[In a clinical lecture delivered by Dr. Corrigan, some very valuable remarks are made on the different kinds of delirium tremens, and their treatment: in speaking of what is generally considered the asthenic form of this disease, he observes:]

A man comes under treatment, not after a few days' illness, but for a considerable time he has been subject in the morning to symptoms similar to those that follow the exhibition of large doses of opium, or of stimulants—symptoms, in fact, resembling collapse.

His stomach is sick in the morning, the skin is clammy, and he is unable to collect his mind for any purpose until the accustomed stimulus is renewed. In this way he continues for an uncertain period of time, till at length vomiting sets in; he can no longer drink, and now the state of collapse, or nervous irritation, such as precedes an attack of acute disease, comes on, and obliges the patient to seek advice. He cannot sleep; images of various kinds float before the eyes; his stomach is sick; pulse quick and weak; skin cold and clammy—a set of symptoms constituting, as I have said, a state of collapse consequent on the cessation of long-continued stimulants. Your patient is altogether in a condition in which death may occur at any moment, so that the prognosis here is extremely uncertain.

In these cases it is necessary to give stimulants and opium; the opium, you are to remember, is given to allay irritation, and the stimulants in order to bear up the system. Cold douching and a variety of other remedies may be used; but upon them it is not necessary to dwell, as they are sufficiently noticed in every book you meet with. There is one particular symptom observed, usually I think about the second or third day, and one which is never absent; I allude to the tremulous motion of the fibres of the tongue, not of the whole body of the organ, but of a sort of independent motion of individual fibres here and there. The same thing is seen in the orbicularis muscle of the mouth. These signs are sufficient to lead us to a knowledge of the previous history, though the patient himself should deny the circumstances. It often happens that the patient has received a wound in some way; for instance, thrusting his hand through a pane of glass. Now, if, while you are giving the opium, you watch the appearance of such a wound, and find that, instead of secreting the natural purulent discharges, the edges are reverted and red, with the surface dry, you may be assured your patient will not recover; for these indications, like those of the tongue, only being more certain, are evidences that the nutritive function is arrested, and life cannot long continue when that function is impaired to a great extent. Such, then, is a sketch of the more frequent form of the disease.

The next variety gets a similar name—delirium tremens—but we should carefully mark the distinctions between this and the first described variety, or a fatal mistake may be made. And here I should observe, that it is the fact of thus erroneously describing under one name varieties in this disease, which has given rise to such a contrariety of opinions respecting the mode of treatment, &c., proper to be adopted in it. Dr. Lendrick, a man of great observation, first showed that the ordinary treatment, as opium and stimulants, would not do here, and that bleeding should be had recourse to. I believe, then, that two very different conditions of disease have been confounded under the same name; so you are not always to suppose, when you have got hold of a name, that you have, by any means, got hold of the disease.

The case I am now about to describe may be called sthenic delirium tremens. A man has been drinking for two, three, or four days, and is in a condition very different from the person who has been a long time accustomed to stimulants; there is in this man a state of irritation of the brain and nervous system only in a very trifling degree removed from actual

phrenitis, and were you to give opium in such a case, it would act, not as a sedative, but as a continued stimulant, and you would thus be keeping up the diseased condition into which the patient had plunged himself. Remember, then, that this is a mild case, there being a certain amount of irritation, but a strong approach to positive inflammation. Gastritis is a common accompaniment of this form of delirium tremens, at least a state, like that of the brain, of approaching inflammation of the stomach, marked, as I have said, by some symptoms of nervous irritation, but nothing like the collapse of the former case. During the period of a general election, cases of the sthenic kind are frequently met with; for instance, a man of previous abstemious habits spends two or three successive nights drinking ardent spirits, and presents himself with the symptoms I have sketched for you.

In this, the sthenic form of the disease, then, do not give opium; apply leeches to the epigastrium, and to the head, as also cold lotions; these, with rest and small doses of mercury, are your chief remedies. When you have to some extent allayed the irritation, you may then make a slight approach to the treatment adapted to the first case, but do not commence by stimulating. Recollect that a compound form of the disease presents itself in this case. We now come to the third division of the disease, a form of it in which very little active treatment is necessary; and I may tell you that the skill of the medical man is often most seen in his abstaining entirely from any decided treatment; good practice consists in that as much as in anything else. You must not entirely refrain, however, from giving medicine, if it were merely for the purpose of keeping in view the advantage of the impression on your patient's mind that you are making some exertion for him: and this is a point deserving your attention, for were your patient even a medical man, it would be necessary to act on this principle.

A man presents himself, who has been at one time temperate, at another drinking perhaps for two or three days, and is now laboring under more or less irritation of the brain, manifested by slight attacks of delirium, and want of sleep, forming, in fact, a link between the condition already described as asthenic delirium tremens and the state of collapse. The subject of a case like this gets repeated attacks of a trifling kind; he may be as I have just said, at one time temperate, at another—perhaps in travelling and stopping at different hotels—drinking three, four, or half-a-dozen days, and at length falls into a state constituting our third division: he is capable of exertion, understands what you say to him, and will speak collectively, but when left to himself, fancies strange sights hovering about him. He is neither, as I have said, in the state of the collapse of the asthenic form, nor does he betray the symptoms of cerebral derangement observed in the sthenic variety of the disease, but there is danger of the affection assuming the perfect form from the too frequent recurrence of these slight attacks of mental aberration. The patient takes little or no nourishment. This variety of the disease, then, forms as it were the centre of the balance—but let nature have the management of it; leeching will not be borne, from the previous habits of the patient, and if opium be given, so as to be followed by dryness of the tongue, great mischief is done; so do as little as possible. Give the the patient as much cold air as you can, at the same time keeping his room rather dark. You may either give him ice, or a very cool saline mixture, or cold chicken tea. If restlessness should still persist, you may give small doses of opium, but much of the after-treatment had better be left to nature. The three divisions which I have sketched, you will find worth recollecting; they are such, as in an ordinary exercise of observation, in practice must force themselves upon you. *Med. Times, Feb.* 28, 1846, *p.* 428.

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12.—INTERMITTENT CHARACTER OF CERTAIN DISEASES OF THE NERVOUS SYSTEM.—By Dr. SCHOENLEIN.

The tendency to intermittence of the symptoms, in various lesions of the *cerebro-spinal* system, is a circumstance that ought to be well known to

medical practitioners; as they might readily fall into a serious error in their diagnosis, if they were not aware of it. In the acute hydrocephalus of children, the symptoms in the early stage of the disease very usually exhibit more or less of intermittence. I have repeatedly noticed this circumstance in the genuine disease—not to mention that form of fever which has been called intermittens maligna cerebralis, and which has been so often mistaken for it. In the after-part of the day, the symptoms of cerebral irritation usually come on, and continue till about midnight; then they gradually subside, and the child appears to be almost quite well, so that its parents may probably suppose that it was nothing but a casual illness. Again, however, in the afternoon, the child becomes feverish and uneasy; and the same aggravation and subsidence of the symptoms occur as on the preceding day. This state of things will, if unchecked, continue until the pyrexia and head-distress become permanent. When such is the case, mischief has already fairly commenced, and will perhaps utterly defy the best directed efforts of the most experienced physician. In inflammatory affections of the spinal marrow also, this intermittence of symptoms is not unfrequently observed in the early stages of the morbid action.

*Medico-Chirurgical Review, Jan.* 1846, *p.* 187.

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II.—THE CAUSE AND TREATMENT OF STAMMERING.—By Jno. Bishop, Esq., F.R.S., Surgeon to the Northern Dispensary, &c.

[The different operations which have been practised for the cure of stammering, have generally failed to remove the defect. This is not to be wondered at, since by careful observation, we soon discover that the disease is often of a functional character, and consequently cannot be cured by those surgical mutilations which have of late been practised. M. Bishop observes,]

It has been truly remarked by Sir Charles Bell that the consent of a great number of organs is necessary for the production of the most simple sound, or the articulation of a single word. Dr. Arnott also observes that command over the organs of speech is required in the same manner as over all the muscular organs of the body; as for example, in walking, skating, fencing, and performing on musical instruments. Agreeably to this view, it will be found, on analysis, that want of synchronous action of each part of the vocal mechanism concerned in speech is essentially and fundamentally the cause of stammering. The most common species of stuttering is an attempt to articulate before the vocal ligaments are brought into vibratory action, and the breath vocalized; and, therefore, in order to remove this kind of imperfection, we have nothing more to do than to instruct the patient in the art and method of using the vocal apparatus properly. To effect this purpose, it is necessary to call upon the patient to vocalize the breath so as to utter a continuous sound, as by singing a note in music. This he should first do without making any attempt to articulate a syllable; and then, on repeating the same sound, should endeavour to articulate the word required. This he will be enabled to do immediately if, during the whole time that the attempt is made to pronounce the articulate sounds, care be taken that the glottis is kept in action by the vocalization of the air issuing from the lungs. In this manner the worst kind of stammerers will be enabled to overcome, on the first trial, the difficulty of articulating at will.

On careful investigation, it will be found that the interruptions of vocalized breath in stammering may take place by the irregular actions of four different sets of organs;—1st, by the closing of the valve of the glottis; 2ndly, by the closing of the isthmus of the fauces; 3rdly, by the tip of the tongue being brought into contact with the palate; 4thly, by the closing of the lips. In the first case, the air is alternately rarefied and condensed in the trachea; in the second, the same effect takes place in the vocal tube,

posteriorly to the isthmus of the fauces. When the glottis is involuntarily closed during speech, the articulation of all the vocal sounds is affected. The closing of the isthmus of the fauces necessarily affects, not only those letters and syllables where it ought to remain open, but its irregular action will also cause an involuntary movement, on attempting to pronounce the words beginning with the gutturals *k*, *g*, &c. The involuntary or misdirected action of the tip of the tongue affects the dentals and palatals, such as *l*, *n*, *t*, and therefore words containing or beginning with those letters. That of the lips not only affect the labials, but may likewise impair the pronunciation of all the other letters. The ear of any experienced person may easily detect, without ocular inspection, whether it is the valve of the glottis, or the aperture of the isthmus of the fauces, which is instrumental in producing the interruption, by observing the manner in which the breath is suppressed, and suffered to escape. The same observation will enable him to discriminate the effect produced, when the sounding column of air is stopped by the tip of the tongue. When the lips are the cause of the interruption, we have ocular demonstration to assist us in distinguishing the organs which are instrumental in causing the defect. The mode of relief, however, for all these kinds of stammering is nearly the same, the principle above proposed applying to them all.

The involuntary actions of the voluntary muscles which close the vocal tube may be occasioned, either by momentary nervous excitement, or by peculiar states of the nervous system analogous to those which occur in chorea. In these cases the malady occurs only at intervals, greater or less; and the treatment consists in establishing a healthy nervous control over the vocal organs. The most frequent cause of stammering arises from the imperfect education or training of the organs of articulation, and from a deficiency of that sympathetic association which ought to subsist between the articulating and vocalizing organs. The various and complex modifications of the organs of articulation are acquired only by long and attentive observation, the healthy action of the ear being fundamentally necessary for this purpose; and even although its functions may be healthy, experience often proves how difficult it is for some persons to imitate the isochronous pitch of the most simple sound, which indeed many can never accomplish.

In like manner, when a person whose articulation is perfect hears a strange word pronounced, as for example a word in a foreign language, he is often obliged to make many attempts before he can repeat it. In the Turkish, Arabic, and Russian languages, words might be selected which few if any Englishmen could imitate without long and continued practice. Is it not therefore reasonable to expect that stammering persons, whose organs of articulation have been for many years imperfectly or improperly applied, will require similar efforts to overcome the defect, even after they have been properly instructed how to do so? The configurations of the mouth and pharynx in speech being numerous and complex, the slight changes which modify the sound cannot be explained to the stammerer: his ear must catch all the modifications of sound which constitute articulate language; but it is only by the regulated exercise of the organs of articulation that he can expect to be able to imitate them; and it is owing to the imperfect manner in which this has been performed that stammering in the greater number of cases arises. No person can stammer whilst a continued sound is maintained, for in so doing the valves of the vocal tube must necessarily be open. To prevent stammering, the greatest care must therefore be taken that they do not close upon the vocalized breath.

*Transactions of the Med. Society of London, New Series, Vol. 1. p. 25.*

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14.—CURE OF STAMMERING.—By Dr. SERRE.

[At a meeting of the Academy of Sciences, in February, this year, the *paper read* by Dr. Serre on the cure of stammering, was attended with

particular interest, from the fact that he himself has had to contend against this infirmity from his youth. His distinct utterance and unhesitating manner were practical illustrations of the correctness of his views of the treatment of this affection.]

The following precepts are laid down by Dr. Serre:—1. Stammering, like other defects of speech, can only be got rid of by a firm and persevering determination. 2. Equisyllabism, or the enunciation at equal intervals of each syllable of every word, is the first rule to which the stammerer must submit; under its influence regularity takes forcibly the place of that disorder which characterises his utterance. 3. The action of the orator not only constitutes a language completive of vocal expression, but serves also, according to Dr. Serre, to modulate the sound emitted, the volume and energy of which is instinctively regulated by the precision of the accompanying gesture. 4. The frequent exercise of equisyllabic pronunciation combined with appropriate action must infallibly restore the function of speech to its natural conditions. Stammering is certainly so often the result of bashfulness, that the rules laid down by Dr. Serre cannot fail to produce a favourable change in most persons afflicted with the infirmity. It is obvious that they must, on the contrary, prove inefficient when some physical obstacle exists to a proper enunciation. Such instances are, however, comparatively rare, and to all others, Dr. Serre's method is immediately applicable.—*Med. Times, Feb.* 14, 1846, *p.* 383.

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15.—CAUSES AND TREATMENT OF APHONIA.—By Jno. Bishop, Esq., F. R. S.

[A cold or moist atmosphere very frequently induces this affection in weak and relaxed habits of body, particularly in females. Other causes, as well as humidity, may bring it on, as over-exertion of the vocal organs, nervous excitement, &c. Mr. Bishop observes,]

No sooner is the surface of these membranes exposed to sudden changes of temperature and moisture, than they begin to secrete the fluid peculiar to them. This secretion tends to clog the vibrating surfaces in contact with the larynx, and often impedes the action of the thyro-arytenoid ligaments. The voice sinks in pitch if the relaxation is only partial, as does a reed by partially moistening the membranous tube in which it is placed. When the mucous membranes which line the vocal tube have received such a shock as to induce inflammatory action, the train of symptoms is altogether different, and cough and irritation supervene. In this case the voice is not extinguished, and the complaint requires a very different kind of treatment. It is not, however, proposed to include this condition, which is of an inflammatory character, in our present inquiry. The degree of mischief produced on the membrane often decreases, in proportion as the distance from the respiratory apertures increases; and thus we often find that the nostrils are irritated and relaxed, without the disorder proceeding further. The fauces are next affected; and it is the derangement of these parts in consequence of their having less mechanical support, that chiefly tends to extinguish the sounds of the glottis. The trachea is the part liable to be affected by this kind of relaxation, owing to its component tissues being chiefly of a cartilaginous structure, and to its greater distance from the origin of the mischief.

[The disease is evidently of an asthenic character, hence antiphlogistic treatment is contra-indicated. Stimulants and astringents are mostly to be depended upon, and Mr. Bishop recommends a strong solution of nitrate of silver, applied with a camel's-hair brush, before every other application; and he illustrates its beneficial action by the following cases in which he made use of it.)

Case 1.—Mrs. H., a professional singer, suffered occasionally from loss of voice, which often lasted from six to eight weeks. On one occasion she

was engaged to sing at a concert in the course of a few days, when one of these attacks came on; and she was greatly alarmed at the prospect of not being able to fulfil her engagement. Under these circumstances, I applied to the fauces a solution of nitrate of silver, of the strength of ten grains to one ounce of distilled water, and repeated the application the following morning. Under this treatment the power of the voice returned, and she was enabled to sing at the concert on the third day.

Case 2.—Mrs. R., a lady, who had suffered every winter a loss of voice, was placed under the same treatment with similar results; and is now so sensible of its advantage, that she has recourse to it whenever she happens to suffer from cold, and has not lost her voice for several years past.

When aphonia arises from nervous excitement, we must look for the origin of the affection beyond the mere office of the soft parts of the vocal tube. This condition may often be traced to the nervous centre, most commonly arises from an asthenic state, and is often associated with an hysterical disposition. In some hysterical cases, however, an opposite state to that of aphonia presents itself. A patient was placed under my care, who uttered a constant involuntary bark, like that of a dog, very loud and discordant. It need scarcely be mentioned that no benefit can be expected to result, in such a case, from merely local treatment. Sudden alarm and over excitement will often cause aphonia. When this is produced by an altered state of the nervous functions, galvanism is said to be beneficial. A case of this description is recorded in the Encyclographie Médicale. A young man, having killed a comrade in a duel, became epileptic, and lost his voice from the excitement. All other treatment having failed, his medical attendants had recourse to electricity. A galvanic battery of thirty pairs of plates was employed: the zinc pole was applied to the first cervical vertebra, and the copper pole to the side of the larynx; two hundred shocks were given the first day, and three hundred on the second, when the parts became somewhat sensible. Two days' respite was then allowed, and at the third sitting the patient received three hundred shocks from seventy pairs of plates. On the fourth day, four hundred shocks from seventy pairs were administered; and after the latter application, the patient began to utter a feeble cry. Six days were then allowed to elapse, after which three hundred shocks were given with a pile of thirty pairs of plates. The treatment was continued a few days longer, and at the last four sittings four hundred shocks were administered through the tongue; the zinc pole being applied to the first cervical vertebra, and the copper pole under the tongue. By means of this treatment the voice gradually returned to its natural state, and at the end of twelve operations he was discharged convalescent. In another case aphonia resulted from sudden surprise, and over-exertion. The patient was a tradesman in St. Martin's lane, who was standing in his shop, when an impudent thief entered, very coolly took up some article before his face, and bolted away. The tradesman ran to the door, crying, "stop thief;" as loud as he could vociferate, and was about to repeat the same exclamation, when he suddenly found himself unable to do so. The larynx was rendered mute, and remained incapable of uttering a vocal sound for the space of eight months, when the voice returned unimpaired.—*Transactions of Med. Society of London, New Series, vol.* I, *p.* 32.

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16.—THE PREVENTION AND TREATMENT OF APOPLEXY.—By] MARSHALL HALL, Esq. M.D., F.R.S., &c.

[There are few diseases, the pathological diagnosis of which is of more consequence than apoplexy: the different kinds of this affection requiring diametrically opposite modes of treatment—sometimes an antiphlogistic, and at other times a stimulating kind of management. In speaking of the causes of apoplexy, and its usual effect, Dr. M. Hall first mentions *ment*, *emotion*, and illustrates it by the following cases:—]

A lady parted with her son, on his appointment to India; she became afflicted with apoplectic symptoms, and most complete hemiplegia. Another lady watched a daughter in a dangerous illness; she was seized with hemiplegia of the arm. A gentleman, under the immediate influence of painful tidings in reference to property, was seized with ptosis, paralysis of the rectus externus, and immobility of the pupil of one eye.

[*Muscular effort* is next mentioned as one of the causes of cerebral seizure—also a morbid condition of the stomach—and in illustration of the latter, Dr. M. Hall observes]

A short time ago, I was requested to see a young man, who, after eating heartily of pork at supper, had gone to bed, and risen the following morning free from ailment, but suddenly lost the mental powers, the power of articulation, and the use of the arm and leg. It was a case of severe hemiplegia. In many cases, the effect follows the exciting cause more speedily: in this instance, the hemiplegic seizure occurred soon after rising.

[A constipated and loaded state of the large intestine is also to be classed among the exciting causes—of the predisposing causes Dr. M. Hall classes hyperæmia, or a state of plethora, as the first; but it may also be caused by just the opposite of this, viz., anæmia, or more correctly, hypoæmia; in speaking of this state of the system as a cause of apoplexy, he observes]

A lady who was a patient of the late Dr. Denman was absolutely blanched by the hemorrhage proceeding from a polypus uteri of an intractable character: in the midst of this anæmia she suffered from an attack of apoplexy and hemiplegia, which terminated fatally; and on a post-mortem examination, it was found that laceration had taken place in one of the hemispheres of the brain, with the effusion of blood! A patient of Mr. Hammond, of Brixton, had severe uterine hemorrhage during parturition, succeeded by hemiplegia. A lady drained by intestinal hemorrhage has greatly lost the use of the left arm and leg. It is plain, as I observed many years ago, that a state of general anæmia does not protect the patient from local congestion of the brain. Other conditions of the blood, not merely of hyperæmia or of hypoæmia, but of cacoæmia, result from defective secretions and excretions from that fluid. Defective arterialization of the blood by respiration; the presence of bile in the blood in diseases of the liver, are of this character. But of all the secretions, the inefficient or abnormal separation of which from the blood induces the most marked predisposition to the apoplectic seizure, that of the *urine* is the most momentous.

In diabetes, in albuminuria, the patient frequently passes suddenly into the apoplectic state. In other affections of the urine, there are other scarcely less formidable tendencies to cerebral disease. And if the blood may be in an abnormal condition for want of the processes of purification, it is also subject to be unhealthy in those cases in which the supplies are not healthy. Such are those states of defective and abnormal digestion and assimilation which occur in dyspepsia, with its effects, gout, furunculus, carbuncle, and urinary deposits, and other affections, &c. In all these cases there is danger of apoplexy and paralysis from cacoæmia.

[On the preventive treatment, Dr. Hall remarks,]

The real principle of prevention of the apoplectic or paralytic seizure is that of inducing a state of equilibrium, in regard to plethora or inanition; and of health, in regard to the general tone, habits, and secretions.

[With respect to actual treatment, we must pay especial regard to the cause of the malady; under this head Dr. M. Hall observes]

Besides that of the condition of the general system, the questions—whether the cerebral affection be one of intravascular congestion or extravascular effusion—whether the substance of the brain be compressed or lacerated—is of the utmost moment. In the former case, there is great tolerance of loss of blood, and the detraction of much blood is requisite; in the latter, blood-letting is neither well borne nor required: the system is under the influence of shock, and much cautious watching and treatment

are requisite. When there is plethora or hyperæmia as the cause of the threatening of an attack of apoplexy or paralysis, the remedy, the safety of the patient, consist in—depletion. How are we to be certain of the fact? There may be the appearance of the sanguineous temperament in the countenance, an athletic form, the general appearance of too rude health; and with all this, head-ache, vertigo, and other symptoms of head affection. But is it certain that the symptoms in such a case depend upon fulness? If there be, in addition to the appearances and symptoms which I have enumerated, a disposition to *doze*, it is nearly so. But, in the absence of such symptom, or even with such symptom, may not the real case be indigestion. Certainly. Then what is to be done? How shall we determine a question so momentous to our patient? There is a symptom of great importance, when it can be clearly ascertained to exist. It is the occurrence of vertigo—1. in the stooping, or, 2. in the unusually erect position, especially when these are suddenly assumed. One patient turned giddy when he pulled on his boots; another could not bear to look up to the ceiling of the room. In both these cases the diagnosis was pretty distinct; but in another case, no such event has been noticed. What is then to be done?

There is a resource in such a case, which, in spite of a criticism in a very respectable author, I will again venture to assert, is of immense value. There is no case in which the patient, if bled from a good orifice, in the erect posture, bears to lose so much blood before syncope takes place, as that of real hyperæmia and congestion of the cerebral vessels: there is no case in which the full, not to say the lavish, detraction of blood is so urgently necessary. On the other hand, the case of vertigo, and other symptoms of cerebral affection arising from dyspepsia, neither bears the loss of much blood, taken under similar circumstances of posture, &c., nor requires it. In a doubtful case I propose to adopt this mode of blood-letting; 1st, as a guard at once against the inefficient and the undue loss of blood; and 2nd, as a diagnosis, and as a prompter of our ulterior proceedings. I have adopted this measure so often, and with such satisfactory results, that I cannot recommend it too strongly to my medical brethren. In cases in which it has not been adopted, on the other hand, I have seen one class of patients become a prey to the apoplectic or paralytic attack for want of blood-letting; and another affected with headache and vertigo, yet drained of blood by repeated cupping or leeches.

No other measure affords such security to the patient, such satisfaction to the physician. But I now come to speak of cases in which a state of hypoæmia has already been induced. This is not a state of safety, even against the attack of apoplexy or paralysis. I constantly see patients who are in jeopardy, not from fulness, but from inanition, and who have been kept in a state of anæmia by blood-letting, general or topical, when an opposite treatment is required, to restore the equilibrium of the system, or by defective digestion and nutrition. A state of pallor; a disposition to vertigo, faintishness, palpitation; a state of nervous timidity; the recurrence of the symptoms when the stomach is empty, when the bowels are freely moved, or on suddenly looking upwards, or resuming the upright position after stooping, or on rising from the bed or sofa; such are the diagnostic signs of a state of inanition from a state of plethora.

The history of the case is, in every respect, a great aid in the diagnosis: if depletion has been used, it has been attended by this result—a temporary relief, with the subsequent aggravation of the symptoms; an opposite mode of treatment, very cautiously adopted, and prudently pursued, involving quinine and iron, confers a more permanent benefit, but less marked and immediate. To the important distinction between the immediate but transitory relief conferred by blood-letting, and the slow but persistent relief obtained from quinine and iron, &c., both being observed very closely, I would especially beg to draw the attention of the profession. In the for-

mer case, a state allied to syncope is substituted for the previous symptoms, which return on re-action. In the latter case, a gradual induction of health and restoration of the circulation, effectually and permanently remove the symptoms. Without this explanation of the subject, the phenomena are sufficiently puzzling.

*Transactions of Med. Society of London, New Series, vol. i., p. 184.*

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17.—ON EPILEPSY.—By Dr. C. J. B. Williams, F.R.S., &c.

[In a clinical lecture, Dr. Williams enters at length into the history of some important cases of epilepsy, which had been under treatment in his wards. He points out the variety of symptoms, both in kind and degree, manfested in this remarkable disease, from the transient but often repeated attack (as evidenced in one of his cases), to that of long duration, marked by tonic or tetanic, rather than clonic spasm. He also alludes to that form of the disease, where, after consciousness has returned, there is left considerable stupor from congestion of the vessels of the brain. He here observes]

In the cases, on the other hand, of which we are now speaking, there is a sudden loss of consciousness, with sudden and violent convulsions, lasting for a longer or a shorter time, generally for a short one, and terminating almost as suddenly by a complete cessation of the involuntary motion, and a complete restoration of the natural consciousness.

[When stupor remains after the fit, the attack bears more resemblance to apoplexy than epilepsy:—the difference from apoplexy being rather in degree than kind; the oppression does not extend so far as the medulla oblongata, consequently the respiratory movements are not much interfered with. The effects of remedies substantiate the doctor's views as to the cause of this stupor, viz., congestion: yet in two of his cases the stupor was so speedily induced, and at last so quickly disappeared, that it can scarcely be accounted for on these grounds; neither did the depletory and derivant treatment avail, for the fits increased in severity and frequency. Dr. Williams asks]

What is the true nature of these fits? Of what morbid elements do they consist? In the first place there is suspension of consciousness and volition; this occurs in all the fits, slight and severe; but in the severe fits, there are added convulsions: that is, exalted function of the excitomotory system. These two elements, then, constitute the fits—suspension of the functions of the brain, and excitement of the function of the medulla. But how can we account for this interruption to the function of one part of the nervous centres, and exaltation of that of the other? Can we give any reasonable explanation of it? I think that we can, and that in strict accordance with the whole facts of the history and treatment of these paroxysms. I would ascribe the fits to the mode in which sudden determinations of blood to the head modify the circulation through the nervous centres.

It has been observed in experiments on animals, that a certain amount of pressure on the brain causes stupor; a greater amount produces convulsions also. I have seen the same phenomena exemplified in a human subject, in whom a portion of the skull was incomplete from malformation; and the fact has been repeatedly observed in hydrocephalic patients. In these experiments, the pressure impedes or arrests the circulation through the brain, and by suspending its function causes stupor: but the current of blood being stopped from going through the brain, will go with greater force and rapidity through the cerebellum and medulla, and thus exalt their functions in an inordinate degree. The remarkable anastomosis of arteries in the circle of Willis supplies the channels for this diversion of force; and I cannot but consider this a wise provision of nature, to secure to the medulla

oblongata, essential as its function is to respiration, an adequate supply of blood under varying circumstances of pressure or altered circulation.

And are not the respiratory movements increased in the epileptic fit? Most certainly they are; and so far from apnœa being the cause of insensibility in this fit, as Dr. Marshall Hall supposes, it is a mere occasional and accidental matter, an epiphenomenon, caused by spasm of the glottis, which is sometimes mixed up with the other spasms. Nay, I will go so far as to say that the increased energy of the involuntary respiratory movements is a great mark by which we may distinguish epilepsy from apoplexy, the worst forms of which essentially impair them. You will stare when I tell you that I have seen more than one patient in an apoplectic fit struggling for breath by voluntary effort! The involuntary powers of respiration have been impaired, and the powers of sensation and volition have not been totally abolished, so that the patient feels the want of breath and struggles for it. In these cases there has been hæmorrhage in the tuber annulare or medulla oblongata.

In epileptic and hysterical convulsions the functions of the medulla are excited, while those of the brain are in abeyance; and it is because among those of the medulla that of respiration is well maintained, that the insensibility of an epileptic paroxysm, however long, is not dangerous to life, as the coma of apoplexy. Has the idea never crossed you that there is a small degree of the same thing occurring in ordinary sleep? I have long suspected that sleep is dependent on a diminution of the circulation through the brain, and a corresponding increase through the medulla: the sensorial functions are more or less suspended: the medullary functions are exalted. Hence the contraction of the pupil. Hence the sufficiency of the involuntary movements for respiration, now the sole means. Hence the greater liability to the occurrence of spasmodic and convulsive attacks during sleep, as instanced in the girl Coupees. Hence the superior hypnotic influence of moderate doses of opium, which exalt the medullary function at the same time that they impair the cerebral. Hence, too, the wakefulness often caused by hydrocyanic acid, which remarkably impairs the functions of the same medulla. But I want further and more direct proofs, before I can confidently broach the theory of sleep.

Admitting the notion that fits of epilepsy and convulsive hysteria are due to a diversion of the circulation from the brain to the medulla, we see an explanation why they begin and cease so suddenly. Any one who has watched the circulation through a frog's web must have perceived that if one of the anastomosing vessels becomes obstructed by any cause, the current takes a circuit the other way as freely as if there were nothing to obstruct it; but by and by, when this obstruction, be it artificial or otherwise, is removed, then the current suddenly goes back altogether, and restores the part to its natural condition. So it is with the blood vessels of the brain. When the causes, whatever they may be, which have disturbed the circulation in the nervous centres, and thrown the whole direction of the current through the spinal system at the expense of the cerebral system, are removed, the current suddenly becomes changed; it is restored, the circulation passes equally through the brain, consciousness returns, and the superfluity thrown upon the spinal cord is reduced.

But supposing this change of circulation sufficient to account for the phenomena, what facts have we to prove that such a change attends the paroxysms? One of the first is, that in all these cases, where there is a great tendency to the recurrence of these paroxysms, there are signs of derangement of the vascular system. The fits are, I believe, in almost all cases, palpably and obviously preceded by symptoms of determination of blood to the head; there is an increased pulsation of the carotids, or at the back of the head; or there is palpitation of the heart, directing increased force through the vertebral arteries. We find this illustrated by numerous cases that I have adverted to in former lectures as well as in the present. The

immediate cause of a paroxysm is in general some moral or physical excitement producing violent action of the heart, particularly if the latter promotes a flow of blood to the head, such as with a stooping posture or over-prolonged exertion. Many other things might be said in corroboration of the same point. The subjects in whom these fits are apt to occur, are usually those who present in a very high degree susceptibility to derangement in the vascular system. They are subject to palpitation of the heart, to violent throbbing of the head, sometimes in the carotids, and sometimes in the back of the head, sometimes in other parts of the body, but chiefly near the heart itself. They are often anæmic subjects, in whom the blood is unequally distributed, being monopolized by the parts nearest the heart, while the extremities are comparatively bloodless and cold. But there are other instances in which similar fits occur in plethoric subjects, and in these, I believe, that congestion in the brain is a chief part.

[In persons liable to epilepsy, the blood is very irregularly distributed, and whilst the carotids beat forcibly, the blood may not be freely circulated through the nervous centres.]

This monopoly of blood has two effects. If the heart is much excited, it may set the whole blood in the nervous centres in circulation; the consequences are, sensorial excitement and delirium; and this class of symptoms nervous anæmic subjects present during the irritation of reaction or fever. But in other circumstances we find, not excitement of the sensorial function, but the reverse, stupor, while the spinal function becomes exalted to the highest degree. This is because the determination of blood to the head, strong as it is, is insufficient to set in motion the whole mass of blood in the brain; the current flows with increased force by the vertebral and posterior communicating arteries to the medulla and base of the brain—hence the convulsions; whilst the blood in the hemisphere of the brain is comparatively stagnant—hence the insensibility.

The great practical inferences from these observations are, that nervous susceptibility, as it is called, and a tendency to these hysterical or epileptic paroxysms in the severest forms of such affections, depend on irregularities of the circulation, and the great indication for the cure or prevention of these attacks is the adoption of means which shall equalize the circulation—render it as equal, as steady, and yet as complete as possible in every part of the system—not to allow one part to monopolize the blood, but to take various means to insure an equal distribution in every part.

The means by which we effect this will vary in different cases. The determination to the head is in some instances so strong as to threaten inflammation; or there may be signs of serious cerebral congestion: here blood-letting may be required, but the loss of balance generally takes place most in anæmic subjects, who can ill afford the loss of blood, and whose disorders arise, in a great measure, from this very cause. Hence depletion, although necessary in a few urgent cases, is generally an exceptionable remedy, and the object, in most instances, is to improve the vigour of the circulation, and increase the quantity of blood, rather than the reverse. But the leading indication is, to insure the equality of its distribution. Although we do not abstract blood, yet it is a clear indication to derive it from the head and spine, and we effect this by various means; to wit, by cold to these parts, and particularly to the back of the neck, by heat to other parts, particularly to the extremities; by purgative and diuretic medicines, by blisters, or other means of counter-irritation. These remedial measures variously combined and applied are all severally useful in such cases. We attempt the same objects more habitually by various regiminal means that keep up the cutaneous and extreme circulation; by regular, but moderate, exercise; by warm clothing of the surface and extremities; by the shower-bath; or cold sponging, followed by friction and other practices which promote a thorough distribution of blood throughout the body.

We *have found that the action of the* heart is often much disordered; the

patient is very excitable, and subject to palpitation: this cannot occur without increasing the disorder of the circulation. Remember that the increased force of the heart does not set the circulation right; for at the time that its throbs are violent in the chest, the pulses are weak at the extremities—here, in truth, is the cause of the fits It is therefore an object to prevent these attacks of palpitation; this is one reason why I gave hydrocyanic acid, digitalis, henbane, and valerian; and most valuable they are. I do not know any medicines which are so successful in diminishing epileptic or hysterical convulsions; reducing its irritability, and acting as they do by tranquillizing the action of the heart, preventing those bursts of violent movement which derange instead of promoting the circulation.

Another indication will be the removal of all causes of excitement that set the heart in inordinate action—moral emotions, over-exertion of any kind, any irritation of the alimentary canal, of the uterine system, of teething. Infantile convulsions come from similar causes; they cluster together as a group of the same class. Any irritation which sets the heart in violent action may bring on paroxysms. I maintain that these sudden attacks are brought on mainly through an irregular distribution of blood dependent on a violence of action or a determination of blood from some similar cause. Teazing and irritating measures often do harm in this way. For example, one man's fits seem to have been increased by severe counter-irritation; and they soon ceased under a soothing plan.

Lastly, there is a further indication to improve the tone of the whole system of blood vessels. There are some cases in which we find a beating in the carotids and subclavians, and fits ensuing as a consequence, and we cannot perceive that there is any palpitation of the heart. It is not that the heart acts more strongly, but a loss of tone takes place in the great arteries. They become unduly large, and let the current of the heart's force into them in too great a measure, causing a determination of blood. This takes place in an atonic state of the system, and is generally connected with other symptoms of loss of tone, weakness of muscles, depression of strength, liability to flushings of the face, loss of power and heat in the extremities, and so forth. It is a great indication in such cases to improve the tone of the system; and it is under this head that we may notice the operation of what are called tonic remedies. This is a very large class; some of these remedies do not appear to be stimulant at all; they seem to have very little operation besides being tonic or promoting the tonic contraction of animal fibre. Such, apparently, is the operation of nitrate of silver, sulphate of zinc, sulphate of copper, and some others. These are amongst the most useful remedies in diminishing the tendency to these paroxysms; and I suspect they effect it in the manner I have just surmised.

But there is another class of remedies still more useful, and I believe they are more useful because they promote the restoration of the natural circulation in a double mode—I mean chalybeate tonics, mineral acids, bark, quinine, &c.; but none stand so high as the preparations of iron. They improve the tone of the blood-vessels, and operate as astringents. None is so useful under such circumstances as the tincture of muriate of iron. In other cases the other forms of iron may be preferred, but in these cases, where there is palpitation of the heart and failure of circulation, the muriated tincture of iron is the best I know. And there is another operation beside that of increasing the tone of the animal fibre, namely, the restoration of the proper quality and quantity of the blood; and by effecting this the inequalities of circulation are also reduced. I have stated in the present lecture that these inequalities are usually connected with anæmia. In proportion as that is removed, so the vessels are better filled with blood of a better quality—more abundant in red particles, and in proportion as it is better circulated to the extremities, less expended on parts near the heart itself, in that proportion will the tendency to these fits or other evil results *connected* with irregular circulation diminish. Hence we find that although

by hydrocyanic acid, digitalis, and other means of tranquillizing the circulation, in the first instance we can best prevent a recurrence of these paroxysms, yet we produce a permanent cure best by the tonic class of remedies. They improve the tone of the body, the condition of the general circulation, and render the heart's action more effectual for this purpose.

*Med. Gaz. Nov.* 21, 1845, *p.* 1270.

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18.—THE TRUE SPINAL SYSTEM.—By MARSHALL HALL, M.D., F.R.S., &c.

[In the Lancet, Dec. 6, 1845, is a note from Dr. M. Hall, to point out what he really claims in regard to the advancement of our knowledge of the nervous system; and particularly in order to correct misapprehensions, liable to arise from some recent observations of Dr. Copland, he gives the following arrangement:—]

THE TRUE SPINAL SYSTEM COMPRISES FIVE POINTS:

1. Its Principle: viz., the vis nervosa—especially in its newly-discovered reflex course of action;

2. Its Anatomy—viz., 1. The True Spinal Marrow, with its 2. Class of associated 1. Incident, and 2. Reflex, nerves;

3. Its Physiology, viz.—1. The Reflex Function, in 2. The whole Class of the Acts—1. Of Ingestion, and 2. Of Egestion; and especially 3. Of Respiration; 4. Of Parturition;

4. Its Pathology: viz.—1. The Reflex, and 2. The Centric, actions, in 3. The whole class of Spasmodic diseases.

5. Its Therapeutics: viz.—1. The Nervous and Reflex, and 2. The Vascular or Centric, modes of action of 3. A whole class of—1. The causes, and 2. The remedies of disease. *Lancet, Dec.* 6, 1845, *p.* 627.

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19.—ON THE EMPLOYMENT OF MAGNETIC ELECTRICITY IN CERTAIN FORMS OF PARALYSIS.—By J. M. NELIGAN, M.D., &c. &c.

[One of the principal reasons why electricity and galvanism have fallen into disuse has been the difficulty of their application, in consequence of the large and inconvenient size of the apparatus; but now that such great improvements have been effected in the construction of magnetico-electrical machines, this objection is removed, yet it is to be feared that its too indiscriminate employment may bring it into disrepute. In the following cases, Dr. Neligan has confined its use to certain forms of paralysis, in which there appeared no organic lesion, but merely a want of nervous energy. He thus describes the apparatus used on these occasions:]

The instrument which I have employed is that which consists of a small battery, in connection with a frame, on which is fixed an upright straight magnet, surrounded with a bundle of iron wires, round which are coiled some thousand yards of insulated large and small copper wire, divided into seven different portions, each of which terminates separately in a small brass nob, brought up through the bottom of the frame. The shocks are produced by the continuity of the stream of electricity being broken, by the alternate attraction and repulsion, by the magnet of a piece of soft iron, which is kept in contact with a platinized screw, by means of a piece of watch spring. This instrument possesses many advantages, from its portability, the great readiness with which it may be applied, and the facility with which the shock may be regulated; the latter being effected by taking in one or more additional coils of wire, which is done simply by moving a brass regulator attached to the frame to the different nobs, in which, as it is said above, the coils of insulated wire terminate. The profession in Dublin are supplied by Mr. Robinson, of 65 Grafton street, the cost of the instrument being from £3 10s. to £4 4s.

The form of paralysis in which I have found magnetic-electricity prove most useful, is when a single muscle, or a certain class of muscles, have become paralyzed from any special or local cause. Thus, I have derived peculiar benefit from its use in that particular form of paralysis of the muscles of the fore-arm, which is produced by the action of lead, and which is so frequent a sequence of painter's colic; as also in those cases where a single muscle becomes paralyzed, either from exposure to a draught of cold air, or from continued pressure on the nerve by which the muscle is supplied. In the treatment of hemiplegia or paraplegia, even in their chronic stage, when, of course, the use of any plan of stimulant treatment could alone be had recourse to, I have not seen any benefit produced by the use of electricity; nor, indeed, in any instance where the cause of the disease could be traced to the brain or spinal marrow. In short, I believe that electricity must be looked upon as a remediable agent applicable to local and not to general paralysis.

[The first case was that of a girl nine years of age, who had paralysis of right sterno-mastoid muscle, resulting from inflammation of the cervical fascia. This took place in Nov. 1843; the result was wryneck; the right sterno-mastoid was paralysed, and the left having nothing to antagonize, it assumed a state of spastic rigidity producing this deformity. The treatment at first was small doses of saccharated carbonate of iron, with the view of improving the general health, and afterwards to make use of magnetic electricity. In three weeks' time, he says]

I commenced the use of the electro-magnetic machine with the child by applying the conductors of the instrument in which pieces of sponge, moistened with salt and water, were fastened, one to the origin, and the other to the insertion of the right sterno-mastoid muscle. The application was at first continued for only a quarter of an hour, but was gradually prolonged until she could bear it for half an hour at a time, which period I never exceeded. The weakest power of the instrument was used, and it was applied only twice a-week. After the third or fourth application, a decided amendment was visible; the sternal end of the muscle being the first to regain its power, as was evident from its becoming fuller, and contracting more strongly under the shocks. The head gradually assumed its natural position, and was perfectly straight on the 20th of May, at which time, also, not the least difference in the development of the muscle of either side could be perceived.

In this case the result of subsequent experience leads me to believe, that the cure would have been much accelerated had the electrical shocks been more frequently applied; but as it was the first case in which I employed the electro-magnetic machine, I was cautious in its application.

The second case in which Dr. Neligan tried it, was one of painters' colic, succeeded by almost complete palsy of the muscles of both fore-arms. After the colicky pains were removed and the bowels opened, he was subjected to the influence of magnetic-electricity: though previously he could not stir his hands, they immediately closed on the conductor. The application was continued for half an hour at a time, and in four weeks he was quite cured. The next was a case of paralysis of the right shoulder, from the effects of damp. He was a sailor, and had slept for nights together in wet clothes on deck: his right arm at first began to feel heavy and numb; it pained him to stir it; and he gradually lost all power over it. Blisters and moxas had been applied without any benefit. Electro-galvanism was at length made use of by Dr. Neligan, on the 20th of December, and by the 30th he could use his arm nearly as well as ever. Dr. Neligan adds]

From what I have already said, I need scarcely add, that I have employed magnetic electricity in a great number of cases of hemiplegia and paraplegia, in their chronic stage; but my experience leads me to place little reliance on its application in such cases. Indeed, so far from proving beneficial, I have seen it, in some apoplectic individuals, prove absolutely injurious by

its effects in hurrying the circulation. If the above short observations and cases lead to a more correct appreciation of a useful therapeutic agent—hitherto too much overlooked by the regular practitioner—my object in making them public will be completely answered.

*Month y Jour. of Med. Science, April*, 1846, *p.* 225.

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20.—STRYCHNINE IN PARALYSIS.—By Dr. FAVELL, Sheffield.]

[At a meeting of the Sheffield Medical Society in Nov. last, Dr. Favell read a paper on the efficacy of strychnine in certain cases of paralysis which had occurred in his practice; in most of them it was of long standing, and in none very recent.]

The dose in which the medicine was given at the commencement of the treatment, varied from one-eighth to a quarter of a grain, and it was afterwards carefully increased. He had never given a larger dose, however, than three quarters of a grain three times a-day. Dr. Favell also related the case of a child, aged twenty-two months, suffering from paralysis of the lower extremities, in which he had administered strychnine successfully. In this case he began with one-sixteenth of a grain three times a-day. He afterwards proceeded to notice some of the formidable consequences which occasionally result from the administration of strychnine. Amongst others, he related the following particulars of the case of a woman, aged 69, who had been taking strychnine for twelve days. She began by taking one-sixth of a grain twice a-day and the dose was afterwards increased to a fourth. Three days after having commenced the larger dose, she was seized one morning, shortly after having taken her medicine, with the following symptoms: the surface of the body was bathed in perspiration; pulse 160, small and feeble; pupils imperfectly susceptible to light; articulation exceedingly indistinct; breathing laborious, almost stertorous; the paralyzed hand very hot, the other less so; great anxiety and distress.

After a number of observations, the author read the following corollaries, which he thought were abundantly established by the particulars he had given:—1st. That strychnine is efficacious in relieving certain forms of paralysis. 2d. That the peripheries of both motor and sensitive nerves are affected by strychnine, but that the former are influenced more powerfully than the latter. 3d. That, although strychnine appears to act most powerfully on the nerves of the paralysed part, those supplying other parts are also affected by it. 4th. That strychnine sometimes produces dangerous symptoms, and therefore its effects ought to be carefully watched. Dr. Favell contended that the forms of paralysis most likely to be benefitted by the administration of the medicine, are those depending on cold, poisons, and certain molecular changes in the brain and nerves, altogether inappreciable by post mortem examination; and he also maintained that the most dangerous symptoms which result from an overdose are generally caused by the influence of the drug on the nerves supplying the heart.

*Prov. Med. and Surg. Jour.*, *Dec.* 31, 1845, *p.* 761.

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21.—TREATMENT OF PARALYSIS (FROM ARSENIC) BY "FIRING."—By. Dr. CORRIGAN.

[William Murphy, æt. 26, was admitted into hospital on the 7th of December, 1845, labouring under paralysis of the upper and lower extremities. He attributed the attack to having taken a dose of arsenic by mistake for flour;—his limbs could not support the weight of his body.]

Five grains of blue pill were given three times a day, until the 13th, when the mouth became sore. 17th. No improvement; the firing iron was applied along the spine and over the thighs and legs. 20th. He has regained

considerable power over the arms, but not over the lower limbs. The firing is applied every day along the spine, thighs, and legs. 24th. He is now able to walk; firing to be continued daily; one-sixteenth grain of strychnine ter in die. January 5th, 1846. Limbs rapidly regaining their strength. On the 8th instant, all treatment was discontinued. He was retained in hospital until the 23d instant, lest any relapse should occur. He occasionally calls at the hospital, and is, at the date of this report, February 25th, in the possession of perfect health and strength.

[Dr. Corrigan, in making some critical remarks on this case, said,]

I wish now to point out the mode of using this application, and the reason for giving it a preference over other counter-irritants. The iron used is very portable, consisting of a thick iron wire shank, of about two inches long, inserted in a small wooden handle, having on its extremity, which is slightly curved, a disc or button of iron, a quarter of an inch thick, and half an inch in diameter, the whole instrument being only six inches in length. The face of the disc for application is quite flat. This, trifling as it may seem, must be attended to. In the French canterizing irons, as they are sold by the cutlers, the buttons for the cauterizing are spherical, and the consequence is, that they must be either pressed long and deeply into the skin, to bring them in contact with an extent of surface equal to their diameter, or they can be made only to touch at a single point. Another objection to the French iron, is the great length of its iron handle. This is necessary in the French instrument, as the iron is intended for being heated in the fire, but it terrifies the patient; whereas this little instrument will hardly attract attention. The only other portion of apparatus required, is a small brass spirit-lamp, so small that it can be carried in the waistcoat pocket. Mr. Milliken, of Grafton-street, made the apparatus for me. To use the instrument, it is only necessary to light the lamp, and hold the button of the instrument over the flame, keeping the forefinger of the hand holding the instrument at the distance of half an inch from the button. As soon as the finger feels uncomfortably hot the instrument is ready for use, and the time required for heating it to this degree, is only about a quarter of a minute. It is applied as quickly as possible, the skin being tipped successively at intervals of half an inch over the whole affected part, as lightly and rapidly as possible, always taking care to bring the flat surface of the disc fairly in contact with the skin. In this way the process of firing a whole limb, or the loins, making about 100 applications, does not occupy a minute, and the one heating by the lamp suffices. You can ascertain at once whether the heat be sufficient. If you look sideways at the spots as you touch them, you will observe that each spot the iron has touched, immediately becomes of a glistening white, much whiter than the surrounding skin. In the course of a quarter of an hour, or sometimes of a very few minutes, the whole skin becomes of a bright red, and the patient feels a glow of heat over the part. The iron, I need hardly observe, is never rendered red hot. It is, indeed, very little hotter than boiling water, and I never made an eschar with it, and very rarely indeed raise a blister. There are merely seen upon the skin next day, a number of circular red marks, the cuticle not even being raised, and the surface being ready, if required, to receive a fresh application, and what is of no trifling consequence, where such an extent of counter-irritation has been used, there being no discharging surface to interfere with the motion of the limb, or the comforts of the patient. Indeed, in most cases, the patient is quite unconscious of what has been done. Even in the case of a medical friend of mine with whom I used it, he could not even guess what the application was; he merely knew that a not disagreeable smarting or heating sensation was suddenly produced, but could not say how until I showed him the instrument. This you will at once see is a considerable improvement on the actual cautery, whether as regards the horror of the patient on seeing a red hot iron drawn out of the fire, or the deep ulcer produced by its application.

The thickness of the disc or button of the instrument is not a matter of indifference. If it be thinner than the measure I have given, it will cool too rapidly; if it be thicker, it will take too long a time in heating. Of the little pain produced by its application, you can form an estimate when I tell you that some of our resident clinical clerks here have preferred it in their own cases, when suffering under local muscular rheumatism, to any other method of counter-irritation, as being the least troublesome, the most rapid, the least painful, and the most effectual. I can certainly recommend its application in the way here directed, as one of the most useful of our counter-irritants; it can be applied so rapidly, so extensively, and, as I have already said, without even the patient knowing very often what has been done. Its superiority over blisters may also be owing to the suddenness of impression produced. The effect is often as instantaneous as the application. My friend Dr. Mitchell, master of the Victoria Lying-in Hospital, consulted me some months since for a severe attack of lumbago. I applied the firing, and he was in one minute quite free from pain. He has since used it himself extensively in practice, and, I believe, he will shortly publish the result of his observations.

A gentleman, in leaping from a railway carriage, strained the muscles of his loins. He used for two or three days, liniments, and took a warm bath. He continued to suffer so much that he at length called on me. He could not sit down on a chair without much inconvenience, but to rise was a labour of great torture. While conversing with him, and drawing off his attention, I heated the iron and fired him over the loins. He was instantly well.

In another case a gentleman from riding a hard pulling horse, began a year since to feel numbness in the little and ring finger of the left hand. This gradually crept up along the ulna, to the elbow, and at length there was such loss of muscular power, and so much numbness whenever the bridle passed upon the fingers of the left hand, that he became very nervous about riding. I fired him along the forearm inside and outside from the elbow to the hand. He has felt no inconvenience since, and a period of a month has elapsed. In sciatica I consider this mode of firing a most valuable aid in our treatment. It may, however, require several applications before permanent relief is obtained. I have also used it with the greatest advantage in cases of neuralgia of the fifth pair of nerves, and in paralysis of the portio-dura of the seventh. Even delicate females will not object to its frequent repetition when required. *Dub. Hospital Gaz., March*, 1846, *p.* 209.

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22.—IDIOPATHIC TETANUS.—By J. Watson, M.D., Senior Physician to the Glasgow Royal Infirmary, &c.

[In September 1845, Dr. Watson read a paper before the Medico-Chirurgical Society of Glasgow, on a case of idiopathic tetanus, which had come under his care at the infirmary. The patient, John Kelley, aged thirty years, had felt for some days unpleasant sensations, as stiffness and pain, in different parts of his body—but on his admission to the hospital the muscles of the jaws, neck, both extremities, back, and abdomen were in a state of rigidity—the body was curved forward in consequence of the head and loins being drawn backward—every two or three minutes the pain and muscular contractions were increased, the paroxysms lasting about five or six seconds. He had not received a wound, but had been much exposed to cold and wet.]

The following treatment commenced immediately on his admission (2 o'clock, p.m ) He was cupped over the loins to twelve ounces. Had a turpentine enema; was ordered a colocynth pill containing a drop of croton oil every four hours, till free catharsis should be produced; a draught with one drachm of laudanum also, every four hours, viz: alternately with the

pills; a little wine or spirits from time to time, and what nourishment he could be induced to take. Nine p. m.—Pain of loins nearly removed since he was cupped—otherwise he is not improved. Bowels only scantily moved: the spasms remain, and since admission he has been tormented with an incessant and painful desire to micturate. The catheter was ordered; the pills continued; the turpentine enema repeated, and veratrine ointment rubbed over the muscles of the lower jaw and spine. Wishing to give a trial to the Indian hemp (opium in the mean time seeming to be contra-indicated by the state of the bowels), the draughts were intermitted, and forty drops of the saturated tincture of the hemp ordered every second hour.

7th.—Next morning I found my patient's general health greatly worse, and the spasms and rigidity unabated. His pulse was 112, full and agitated, but not hard; skin still warm, and very moist; several stools, still scanty, their appearance was not particular; urine drawn off in fair quantity, but painful desire to micturate incessant; frequent vomiting during the night; and altogether he is in a state of extreme suffering. Ten minims of hydrocyanic acid were added to each dose of the cannabis; the purgative pills were omitted, and ice ordered to be applied over the spine. Two p. m.—No vomiting since the morning; felt gratified by the ice; no other change.

[Dr. Watson now called his colleagues together and had a consultation, when it was decided to adopt the former treatment, with the addition of ipecacuanha and calomel, as the gastric irritation had subsided.]

In consequence, blisters were applied over the spine; two grains of opium with one of ipecacuan were ordered every second hour; ten grains of calomel in the morning, to be repeated if rejected; two drachms of laudanum per anum, unless relieved by bed-time, and a turpentine enema in the morning. The catheter to be introduced as called for, and wine and stimulants as formerly. All other remedies to be desisted from.

8th.—Gastric irritability returned, medicines and food being almost immediately rejected. The spasms and rigidity, as also the dysuria, are nearly the same; and the pulse is quick. But the opiate enema has been retained all night, and he has had occasional short sleeps. The turpentine enema, also, given in the morning has produced a large, pretty natural stool, and he thinks himself a little easier. He seems much exhausted, however, and feels weak. The calomel and ipecacuan, with the solid opium, were laid aside, and two drachms of laudanum were ordered immediately, in four ounces of strong beef tea, as an injection, and to be repeated every six hours, a draught, with one drachm of laudanum and eight minims of hydrocyanic acid, every third hour, till easier, or narcotism induced; a purgative enema in the morning, and nourishment and stimulants as required.

9th.—Since yesterday's visit he has had no vomiting. Eight draughts have been taken, and he has also retained four anodyne enemata, each two hours on an average; notwithstanding which, large doses of laudanum and hydrocyanic acid he has not shown the slightest approach to narcotism. He has also taken eight ounces of spirits, and nourishment in fair quantity. He has had three stools—the last particularly dark and fetid. This was the first time anything remarkable had been observed in the stools. Pulse 104, much calmer. General aspect more comfortable, and he expresses himself as being greatly better. Still, however, the rigidity of the body is the same; and although the spasmodic exacerbations are somewhat less frequent, they seem equally severe when they occur. Opiates were continued. Ten grains of calomel were ordered at bed-time, and an ounce of castor oil in the morning.

[The symptoms now gradually abated, and Dr. Watson adds:]

With the diminished call for them, the opiates were gradually withdrawn. From the 14th of February, the hydrocyanic acid was laid aside, and the laudanum reduced to one ounce daily. For ten days longer this dose was continued, after which it was diminished more rapidly. On the 8th of March, he had only two grains of solid opium daily; on the 14th, only one;

and on the 21st, opiates were finally laid aside. The bowels were throughout carefully attended to, and they were not particularly difficult to move. A colocynth pill, with a drop of croton-oil, and occasionally an ounce of castor-oil, and on two occasions ten grains of calomel with the aid of purgative enemata sufficed. As to stimulants, for a few days about the time of his commencing convalescence, he took fourteen ounces of spirits daily: but his usual quantity was six or eight ounces. On the 6th of March, the spirits were changed for a pint of porter. For the last fortnight, he had quinine, steel, and the cold bath. He was dismissed cured on the 3d of April. His residence in the house was fifty-six days, and the whole length of his ailment (counting from the first deviation from health, sixty-six days); but he might be said to have been fairly convalescent from the 3d of March, viz., the twenty-fifth day of the disease, and the fifteenth from his admission.

[Such cases as this are rare. It is the third which has occurred in the Glasgow Infirmary since it was opened fifty years ago. (See a case by Dr. Newbigging, in Retrospect, Part XI., p. 30.) In the treatment of this case, Dr. Watson, under the impression that the spinal cord or its coverings were inflamed, ordered local bleeding and counter-irritation. The pain in the loins was relieved, but there was no alleviation of the tetanic convulsions. This led him to infer that the affection of the nervous centres was functional and not organic, consequently care should be used lest by too active treatment the patient's strength be worn out. The character of the fæcal evacuations in relation to the spasms is interesting—whilst they were natural there was no relief of the symptoms, but when, by the use of purgatives, they became thin and offensive, Dr. Watson observes,]

From the first evacuation of this kind being procured, there was a very marked alleviation of the man's sufferings—and from the stools becoming again more natural, the spasms, both permanent and convulsive, speedily gave way. This case, therefore, is one corroborative of the opinion, that whatever else may be judged necessary for the relief of the patient, much reliance must be placed in respect of a cure on a decided and well-sustained course of purgatives; and this, notwithstanding the at first ordinary character of the evacuations. We all know what a difficult thing it is, in many instances, thoroughly to unload the bowels, and when this is at last effected, what a wonderful amelioration is produced in many convulsive diseases, not very dissimilar in some of their characters to the present. No doubt it must be acknowledged, that this is more likely to occur in idiopathic, than traumatic tetanus, where we have another and obvious source of irritation. Had I another similar case to treat, I do not think I should be so urgent in regard of stimulants; but would content myself with endeavouring to support the patient's strength by less exciting and doubtful means, such as animal jellies, &c., which, as the issue of the case proved, were abundantly sufficient for that end, at least with very slight aid from stimulants.

[The use of opium in tetanus is of the greatest importance; it not only, as in this case, relieves the excruciating pain—but it keeps the patient alive until other remedies, as purgatives, &c., can be introduced.]

*Monthly Jour. of Med. Science, Dec.*, 1846, *p.* 902.

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23.—A CASE OF TETANUS SUCCESSFULLY TREATED.—By W. S. Preshaw, Esq., St. Helier's, Jersey.

[The patient, a boy, eleven years of age, complained of a slight stiffness in the neck, and had pain and difficulty in moving the head and legs: he said he had sustained no injury. He was purged, ordered into a warm bath, and to take an antispasmodic mixture of ether and tr. opii: the rigidity increased, and in the evening swallowing became difficult, and there was inability to move the jaw; the teeth were firmly set, and almost every

muscle rigid, and the spine was bent to the arched form. A French physician was consulted on the case, and he advised the hydropathic treatment. Mr. Preshaw immediately proceeded to put it into operation. He says,]

I enveloped him in a linen sheet, well wrung out of cold water. Over this I placed three or four good blankets, &c., so as to exclude the air, and prevent evaporation. Kept the patient in this condition for an hour, by which time the temperature of the sheet was 100°, Fahr. The coverings were removed, and the patient plunged into a cold bath, rubbed quite dry, and enveloped in dry blankets for six hours, during which time he perspired very freely, and slept soundly, and said he "felt quite slack." Repeated the cold bath while in a state of profuse perspiration, and, after an interval of an hour, the wet sheet and subsequent cold bath. This was repeated every six hours, and after twenty-four hours, the jaw relaxed a little, and the spine became less bent. I now placed him under the douche for three minutes, the water falling from a height of twenty feet, and in a stream of one inch and a half diameter. Dried and enveloped in the blankets as before. Able to open the mouth a little. Ordered the sheet and cold bath as before, and ten days from the commencement of the treatment, every symptom yielded, and the boy is now quite well. *Lancet, Feb.* 7, 1846, *p.* 154.

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24.—TRAUMATIC TETANUS SUCCESSFULLY TREATED BY ACONITE.—By W. B. PAGE, Esq., Surgeon to the Cumberland Infirmary.

[In several particulars this case is most interesting, especially the length of time from the infliction of the injury to the appearance of tetanic symptoms; it was the 22d day before the slightest stiffness of the jaw came on, and it is worthy of notice that the day before the trismus set in, the ward in which this patient was lodged was washed and cleaned. Mr. Page considers it probable that there is some concurrent cause in addition to the external, to produce tetanus, particularly cold and damp, and of course, deduces the inference, that patients should be kept as much as possible from the influence of any circumstances likely to act as exciting causes. The tolerance of aconite in this case is worthy of especial observation.]

This patient, on the 15th of December, in eight hours took nineteen minims of tincture of aconite, (prepared according to Dr. Fleming's formula;) on the 16th, thirty-two minims in fourteen hours; on the 17th, twenty-five minims in seven hours; and on the 20th, twenty minims in two hours. Dr. Fleming, in his treatise on "The Physiological and Medicinal Properties of the Aconitum Napellus," states that "the utmost extent to which he would recommend the physiological effects of aconite to be carried, in order to obtain, with safety and success, its therapeutic effects," is the administration of a second dose of five minims, two hours after the first. The remedy, to be effectual in this disease, must, I believe, be carried to such an extent as entirely to subdue the muscular spasm, and should be continued until the tendency to return of that spasm has materially diminished. To carry it to such an extent requires the extremest caution—the most constant attendance. And here I feel bound to acknowledge the judicious and scientific care which this patient received from Dr. C. B. Radcliffe, who at the time was acting as house-surgeon to the hospital.

Lastly, are we justified in ascribing the successful termination of this case to the employment of aconite? For my own part, although I by no means undervalue the other remedial measures which were adopted, I believe that the recovery may fairly be attributed to the administration of this drug. No one who reads this case can, I think, doubt the extraordinary influence which the aconite exerted over that spasm which is the essential characteristic of the disease, and which, in the majority of instances, *destroys life,* either by causing suffocation from spasmodic contraction of the

diaphragm and muscles of the glottis, or by exhausting the nervous energy. A considerable experience of the remedy in this disease is necessary before any positive conclusion can be come to; but believing, as I do, that it was of essential service in this case, I have thought it right to make it thus public, in order that others may be induced to employ it under similar circumstances, and that in time a sufficient number of cases may be recorded, to render its curative power in this hitherto fatal disease free from doubt.

The analogy which exists between tetanus and hydrophobia naturally leads to the inference that if aconite be efficacious in tetanus it may also be employed with advantage in the latter disease; and should a case occur in my own practice, I should certainly employ this remedy in preference to any other, carrying its effects, as in the above detailed case, to the furthest allowable extent. In fact, from my previous knowledge of the physiological effects of this drug, I had determined to administer it in the event of hydrophobia manifesting itself in any of six children who were bitten by a dog, in an undoubtedly rabid state, about the time when the foregoing case occurred. In five of the children the bitten parts were excised; and happily, I have not been called upon to test the therapeutic properties of aconite in any one of them. I may here mention that the results of Dr. Garrod's important experiments on the property which animal charcoal possesses of destroying the power of vegetable poisons, whether in or out of the body, together with his suggestion that it may exert a like influence over animal poisons, induced me to recommend the application of poultices of animal charcoal to the wounded parts, which was continued until they were perfectly healed. *Lancet, April* 4, 1845, *p.* 394.

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### 25.—CASE OF SCIATICA, TREATED BY BLISTERS AND MORPHIA.

By Dr. Taylor.

[This patient was under Dr. Taylor's care in University College hospital. It appears that in lifting a heavy weight, he had strained his back, and that a few months afterwards (July last), he was suddenly seized with pain in the right hip—striking into the loins, and down the leg. On his admission, November 20th, he had still this pain, but there was no increased heat of skin: he was ordered to take, three times a-day, two ounces of guaiacum mixture, with forty minims of am. tr. of guaiacum, and have a good diet; three days afterwards he was]

To increase the dose of the tincture of guaiacum to one drachm three times daily; a blister to be applied to the right hip, and the blistered surface to be dressed twice a-day with one grain of hydrochlorate of morphia.

Nov. 26.—The pain is at all times less than it was, and much less whilst walking than formerly. Bowels freely opened. 28.—Still improving.

[The blister and morphia were repeated on the 29th, and on the 3d, 5th, and 8th of December. On the 15th, a stimulating liniment; and on the 18th he was discharged cured. Whether sciatica be rheumatic or not in its nature, it is certain that the seat of the disease is in the sciatic nerve. In the treatment of this case, Dr. Taylor attributes the cure to the blistering and morphia. M. Valleix has published an excellent work on neuralgia. He also recommends the application of blisters, but Dr. Taylor remarks that]

The plan of blistering advocated by M. Valleix is the application of flying blisters, as the French term them. This consists in having the blisters very small, allowing them to heal immediately, and in applying fresh ones as the seat of pain changes. This is the treatment which he has himself put in practice, and which he finds more efficacious than any other. Particular portions of the nerve seem to be more liable to be attacked with

pain than any others; these are the points at which they terminate. There are also various centres at which the pain is usually very great, as at the sacrum, great ischiatic notch, and at various other parts of the leg and thigh.

We find an analagous case in hysteria, with spinal tenderness, where there is generally a good deal of pain on the side of the chest and under the mamma, at the points at which the nerves become cutaneous and near their terminations. Indeed, M. Valleix is of opinion that it almost amounts to a rule, that in all cases of neuralgia, the nerve is more likely to become affected where it becomes cutaneous and at its termination than at any other part of its course. After the application of blisters, the next best remedy in the treatment of this disease seems to be the internal administration of the oil of turpentine. Opium given internally generally has very little effect on the disease. *Med. Gaz., March* 27, 1846, *p.* 566.

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26.—TREATMENT OF PERIODIC NEURALGIA.—By Sir B. Brodie, Bart.

In those cases in which the disease has an intermitting and periodical character, you may always relieve it, as you may all other cases of intermittent and periodical character, by the exhibition of quinine, bark and arsenic. But, then, if you give quinine, it must be in rather large doses; sometimes in very large ones. I saw, this very morning, a gentleman who had formerly a nervous pain in the back, almost as bad as the tic-douloureux in the face. It was intermittent and periodical. I told him, when he consulted me about it, that most probably the sulphate of quinine would cure him. He took ten grains daily without benefit; he took twenty with little benefit; and was not cured till he took half a drachm daily. Whether he had been supplied with genuine unadulterated quinine, I will not venture to say; but, at all events, he must have taken the medicine in very large doses. The combination of bark and arsenic, also, is an excellent remedy in these cases of intermittent and periodical disease; but I generally prefer giving quinine first, it being a more innocent medicine, requiring no watching, and the use of it not being subject to the inconveniences which belong to that of arsenic.

[The editor of the Medical Gazette says]

We are perfectly satisfied, from our own observation, of the almost specific power of this plan of treatment in removing the agonizing paroxysms of periodical neuralgia. Bark, if prescribed alone, requires to be given in such very large doses that the stomach is liable to refuse the remedy, before its desired effect upon the system has been obtained; but even in the most aggravated cases, we have never found the disease resist the action of large doses of quinine, either taken by itself, or in conjunction with moderate doses of Fowler's solution.—*Med. Gaz. March* 20, 1846, *p.* 519.

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27.—ON THE USE OF VALERIANATE OF ZINC IN NEURALGIA.—By Joseph Bell, M. D., &c.

[The remedies usually prescribed in the treatment of neuralgic affections frequently fail in relieving the disease. Dr. Bell has recorded several cases which he successfully treated with the valerianate of zinc. In the first case there was severe facial and orbital pain, which had continued for three weeks, with nocturnal exacerbations. He had made use of mercurial and saline purgatives; opium and its preparations; quinine; blisters also had been applied to the nape of the neck. Dr. Bell then prescribed the muriate of morphia and sulphate of bebeerine; still there was no subsidence of the symptoms. He then prescribed as follows:]

Hab. hydrarg. c. cret. gr. xxiv. Pulv. rhei opt. ℈iss. Pulv. aromat.

gr. xij. M. et divid. in pulver, xij. st. j. 2nd, q. q. nocte. Hab. valerian. zinc. gr. vi. Extr. hyoscyam. nigr. gr. xxiv. M. ft. mass. et divid. in pill. xij. st. j. 8va q. q. h.

18th.—Pain since yesterday much relieved; got more sleep last night than he has done since commencement of attack. T. improved; bs. tardy. Contr. et hab. ol. ricini. ℥i.

23rd.—Pain completely gone; T. clean. This gentleman has continued quite free from pain up till this date, and enjoys most excellent health.

[The next case Dr. Bell records is that of a lady, thirty-five years of age, who had severe pain in the brow and front of the head, of two weeks' duration. For some years she had been subject to similar attacks, which had continued for three or four months: she had been subjected to almost every variety of treatment likely to relieve her, without effect. Dr. Bell prescribed as follows on the 28th of September:]

Hab. pil. mass. hydrarg. gr. ij. Extr. hyoscyam. nig. gr. iv. omn. nocte. Hab. sulph. bebeer. gr. x. 4ta q. q. h. Hab. sol. mur. morph. ℥i. 8va q. q. h. Hab. ol. ricini. ℥i. p. r. n.

October 16.—Has persevered most regularly with her medicines. The dose of bebeerine has been increased for several days to a scruple every two hours, without any advantage. At first, she thought, that for an hour after each dose, she felt easier, but now she experiences no relief, except a few hours during the morning, when the pain is lulled, as it were, to break out again with aggravated intensity towards evening. Last night, I was called to visit her about eleven o'clock, when I found her almost in a state of distraction; intense pain shooting from the centre of elbow along course of sagittal suture to occiput. She was rolling about in bed in the greatest agony, and incoherent; P. 70. From six o'clock in the evening, she had taken two drachms of bebeerine, and two doses of her morphia. I ordered all her medicines to be suspended, and prescribed half a grain of the valerianate of zinc, and two grains of the extract of hyoscyamus nigri. every eight hours.

18th.—Yesterday evening pain returned, but did not become severe. She slept soundly several hours during the night, and has no pain this morning; T. cleaner; some appetite. 21st.—Has had no return of pain. General health improved. Shortly afterwards this patient removed to the country. She remained free from pain, till about a fortnight ago, when it returned. She procured a box of the valerianate of zinc pills from town; and in a note to a friend, she states, "that the medicine was equally efficacious in speedily removing her sufferings, as it was on the former occasion."

[The third case described is that of a stout muscular man, sixty years of age. He was called to visit him on the 11th of December: he had pain above the orbits extending to the crown of the head; the pain was paroxysmal, but the intermissions of very short duration. After evacuating the bowels, he gave him quinine, and the saccharine carbonate of iron, with small doses of mur. and acet. of morphia. He also gave castor oil pills, so as to act freely on the bowels. The following treatment was then adopted:]

Intermit. medicam. et hab. valerian. zinc. gr. vi. Extr. hyoscyami. ℥ss. M. ft. mass. et divid. in pil. xij. St. unam, 8va. q. q. h.

12th.—Pain of head better; he thinks pills produce sickness. Contr. 15th.—Has been almost free from pain since 12th, till about three o'clock this morning, when it returned, and continued for five hours, but much less intense than on previous occasions.—Hab. pil. val. zinc. 6ta. q. q. h.—17.—No return of pain. I saw him again on the tenth of this month; and he stated, that he has remained completely free from pain. His general health has gradually improved from the time he commenced using the pills.

Case 4.—January 9th, 1845.—Mrs. H. ætat. thirty years, of dark complexion; ordinary stature; complains of severe pain of right side of brow, extending down along same side of face to chin, and up to occiput. T.

much furred; no appetite. Sleeps none at night, in consequence of pain, which becomes aggravated to an insupportable degree when she lies down in bed. Has slight tonsillitis; P. 90. Pain of head and face of three weeks duration. Soreness of throat commenced yesterday. She ascribes it to her being obliged to walk about the house during the night in consequence of pain. Has taken several opium pills; and has had a blister applied to side of face. Has taken several purgatives.

Hab. h. s. pulv. Doveri, gr. xv. Hab. valerian. zinc. gr. ss. Extr. hyoscyam. nigri. gr. ij. t. d.

12th.—Pains gone. They subsided the day after she commenced her pills; throat well; T. clean. Appetite returned; P. 78. I have not seen her since. The inferences which I wish to be deduced from these remarks are few, but practical. 1st, We should not endeavour only to remedy the impaired digestive functions, even where no other very obvious cause for the neuralgic attack exists, but at the same time direct our efforts to remove the pain, and procure sleep. 2dly, As the special remedies usually employed to effect the latter objects, tend, even in ordinary circumstances, to impair the digestive process, and to deprave the secretions from the liver and the alimentary canal, their use is quite inadmissible in anything like a rational mode of treatment. 3rdly, Judging from the recorded experience found in the history of our profession, the white oxide of zinc and valerian are entitled to great consideration, as remedies of considerable importance in the treatment of nervous affections, especially in neuralgia of the head and face, or hemicrania. Neither of these drugs have the effect of causing gastric disorder. Both have been acknowledged to possess great influence over the nervous system. In neuralgic disease, Meglin's pills have been long celebrated; and my experience of them, especially when combined with the use of valerian, enables me to affirm that their reputation is not unfounded. (These pills are composed of one grain of oxide of zinc, and one of extr. hyoscyam. nigr.)

On the continent, the valeriante of zinc has been employed in various nervous diseases. Dr. F. Devay, in a memoir published in the Gazette Medicale for June, 1843, states that he has used it principally in facial and hemicranial neuralgic affections. In uncomplicated cases, its employment was attended with marked and continued efficacy. He remarks, however, that it had little or no beneficial effect in cases having a rheumatic, syphilitic, or intermittent taint. On the other hand, when the pain was connected with chlorosis, he found the valerianate exceedingly useful after a course of some ferruginous preparation. He also employed it in epilepsy, but with no flattering result. The memoir contains eight cases; three of hemicrania: three of facial neuralgia; one of intercostal neuralgia; and one of satyriasis. In all these instances, the action of the remedy was most beneficial. Dr. Devay administered it in doses of about 1½ grains, divided into two pills, one of which was taken morning and night, but he thinks that the dose may be much increased. The Italian physicians give it in doses of 1½ grains daily. M. Cerulli de Parme has obtained several cures, by causing the patient to take 1½ gr. at the moment of the accession of the pain.—(Rev. Med. tom. ii., 1844, p. 410.)

I have never given more than ½ gr. every six hours, and have combined it always with the extract of hyoscyamus, which may possibly have contributed in some degree to effect a cure. In British practice, so far as I am aware, the valerianate of zinc has been little, if at all employed.

[The sulphate of bebeerine so highly recommended of late in neuralgic affections, Dr. Bell gave it in two of his cases without any marked benefit. The cases under treatment were such as seemed likely to be relieved by it, but perhaps the specimen he used was not a good one. He adds]

I may mention, however, that its use seemed to be followed by a cure, in a very severe case of gastralgia. The patient had employed most liberally *alteratives*, trisnitrate of bismuth alone, and in combination with soda carb.,

ferri, c. sacch., and columba respectively. He also used hydrocyanic acid freely, without any advantage. I ordered him to take five grains of sulph. bebeerine every eight hours. He had used it only for a few days, when the pain ceased, and has not returned. Out of a great many instances in which I have prescribed the bebeerine, this is the only one in which I could ascribe to it any decided curative effects. It seemed, however, to possess in some cases of dyspeptic hypochondriasis, connected with a deposit of oxalate of lime in the urine, considerable tonic properties. In one case of this nature, in which the sulphate of quinine disagreed with the patient, the bebeerine formed a most admirable substitute. *Northern Jour. of Med., Feb.*, 1846, *p.* 87.

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28.—THE EFFICACY OF TANNATE OF QUININE IN TYPIC NEURALGIA.

In 1831, Ronander cured several obstinate intermittent fevers, which had resisted the sulphate of quinine, and other powerful febrifuges, with this remedy. In 1833, Buchner repeated the proposal to substitute tannate for the sulphate and muriate of quinine. The author tried the tannate in intermittent neuralgia and intermittent fever, in cases where the sulphate of quinine had no effect, or only caused some trifling improvement, and he invariably found the above recommendations confirmed. The dose is about the same as that of the other salts of quinine.—*Dr. Hauff, of Kirckheim, in Oesterlen's Jahrb.* *Northern Jour. of Med., Dec.* 1845, *p.* 434.

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29.—USE OF ACONITUM NAPELLUS IN NEURALGIA.—By J. Kirby, M.D. &c.

[It frequently happens that new remedies are made use of so much at random as speedily to bring them into discredit with the profession; but in the revival of the use of aconite as a therapeutic agent, we believe we have a valuable means of doing good. It is of the greatest importance that it be used with caution, or serious mischief will be the result. Dr. Kirby reports two cases in the Dublin Medical Press, from a perusal of which, it will be evident how carefully this remedy should be applied for the relief of disease, at the same time they afford abundant evidence of its therapeutic power.]

Case 1. One drachm of the tincture of aconite of the shops was rubbed up with an ounce of yellow fresh palm oil, and applied in drachm quantities, thrice a-day, to the legs of an old lady, whose pains appeared to me to be of a purely neuralgic character. In the evening the pains were relieved; at night she raved, was painfully vigilant, talked of strange visions, and so far alarmed her family as to induce them to send for the apothecary, who very properly ordered the unction to be discontinued, and the legs to be washed clean. The next morning she was free from pain, gave a sad account of her troubled night, and told me that she was affected as she was used to be by opium, the use of which she always dreaded. A few glasses of wine set the old lady to rights, and she was well in the evening. It deserves to be recorded, that the maid who rubbed her complained that her hands were benumbed, and this sensation continued for several days.

Case 2. I ordered two drachms of tincture of aconite of the shops, with four ounces of camphor liniment, to be rubbed into the back of a gentleman complaining much of dorsal pains, which were particularly distressing at night. On the first occasion only a table spoonful of the liniment was employed. He felt local relief, but he suffered much during the night from vigilance, occasional drowsiness, startling dreams, and floating visions, such as he never before experienced, unless under the influence of opium. He complained that the odour from the first disturbed his senses, and that during the night it was so offensive he tried to escape from it; at one time by enveloping his head with his bedclothes, at another time by sitting up above the

range of the dense vapour, to which he attributed the turbulent and miserable fantasies of the preceding night. My morning visit found him sick to vomiting, with headache, and without appetite, looking sallow and haggard —appearances which he did not lose until noon, when a tumbler of mulled wine and water, with a drive of a few miles, so fully refreshed him, that he was able to dine as usual, and by evening he had forgotten all about the history of the preceding delirium, yet he begged to have no more of the liniment. Since these observations were written, the last Medico-Chirurgical Review shows me that Dr. Fleming has been engaged in an inquiry as to the medicinal properties of the aconites; and I think it necessary to make this remark, lest any saying of mine prefatory to the cases may be supposed to have any reference to his therapeutical proceedings, which I beg distinctly to assure him they have not. *Dub. Med. Press, Jan.* 14, 1846, *p.* 23.

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30.—CANNABIS INDICA IN INTERMITTENT FACIAL NEURALGIA.—By W. HARGRAVE, Esq.

[A patient of Mr. Hargrave's, who was subject to attacks of neuralgia of the supra-orbital nerve, for which he had taken quinine, iron, arsenic, &c., without any relief, had a return of the disease, whilst under treatment for hepatic derangement. It was so decidedly periodical, commencing at eight, a. m., and declining at two p. m., that Mr. Hargrave determined to give the condemned quinine. Accordingly he ordered him to take a pill containing 3 grains of sulphate of quinine, and ½ of a grain of sulphate of morphia, an hour before the expected attack. The following day (March 4th), there was relief afforded, and the tincture of Indian hemp was then prescribed.]

℞. Trœ cannibis Indicæ, ℥ii. Capr. gtt. v. in. ℥i. Camp. julep. ter. in die.

5th. At 11 a. m. found him in great suffering; no change in the periodicity of the attack. Directed to rub some cajeput oil to the forehead and brow of the affected side. Sulp. quinæ, gr. iii. in forma pilulæ, to be taken at night, also in the morning, with the cannabis Indica. 6th. Pain did not begin till 10 a. m., in place of eight. To increase the tincture of can. Ind. to seven drops, and to continue the quinine (three grs.) three times a day. 7th. Pain at the hour of yesterday, ten a. m. 9th. Free from pain yesterday till 11 a. m.; character altered—that is, he can bear it, and subsided so much before two p. m. that he could leave his house. This morning the pain returned at half-past ten a. m.; it was still diminishing in intensity. As the quinine was beginning to exhibit its usual effects on him, tinnitus aurium, with confused noises through the head, compared by him to a "brass band," it was discontinued, and the trœ cannabis increased to gtt. decem. ter in die. He went into the country for a few days, and returned perfectly free from pain.

Though in this case there was a combination of two very active agents to combat the severity of the neuralgic attack, and a local one—namely, the cajeput oil, which I know was genuine—(*en passant*, I may remark that in one instance, in a married lady, who was suffering much from sciatica, in which every treatment had failed to afford any ease, for three days the most marked benefit was derived from the application of the oil over the origins of the sciatic nerve; the pain afterwards returned, but with diminished intensity, and was more amenable to the means then adopted for its removal)—no doubt remained on my mind that the cannabis controlled the paroxysms of pain, perhaps also its periodicity, and when increased to seven and ten drops, its effects were more decided. In no instance did it produce any intoxicating effect, or any approach to it, except on one occasion, when some nausea of the stomach supervened, on taking the prescribed quantity.

[Not until two years after this was there a return of the complaint, when it made its invasion in the left superior maxilla, in the alveolar ridge.

Every substance, no matter what its temperature, produced great suffering on touching the gum.]

He was ordered the træ cannabis Indica in seven-drop doses in camphor julep, to be increased to ten, three times a day, if necessary. Before the fifth day, he was completely relieved from pain, and was most delighted to experience no inconvenience whatever from solids or fluids of different temperatures when taken into the mouth, though they came into direct contact with that part of the gum previously so painful. It is necessary to observe that the attack of neuralgia on the second occasion came on at night, and did not observe the same marked periodicity that it did in 1843; there was scarcely any remission of it. Whatever doubts might be entertained as to the efficacy of the cannabis when exhibited at the time that this gentleman was suffering from frontal neuralgia, as it was then conjoined with quinine, no doubt whatever can exist of its efficacy the second time that it was administered after the lapse of nearly three years, as my sole reliance was upon it, having been given *per se*, and proving itself a valuable agent in certain cases of nervous affections.—*Dub. Med. Press, Dec.* 18, 1845, *p.* 379.

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31.—NEURALGIA TREATED BY COLCHICUM.—By George Fife, M. D.

Colchicum, of all the means internally employed, deserves most confidence in the treatment of this painful and distressing disease; the advantages of this medicine in these cases seem, if possible, to be greater than those which it possesses in gout and rheumatism. From what has been lately said of this medicine, this praise may, by some persons, be regarded as somewhat dubious; such is not, however, to be considered as the meaning with which the previous remark is made; on the contrary, I can safely affirm that so far as my experience of this medicine extends, I regard all other means as secondary or auxiliary to it, not only in the disease under consideration, but also in gout and rheumatism, in which it has become fashionable to decry its merits, if not actually to accuse it of prejudicial effects. That such do result from the indiscriminate and irrational manner in which it is employed, cannot be questioned, but in my practice, which now extends over a considerable period, and during which many cases of gout have been treated, I can call to mind no case in which the colchicum has been injurious, or followed by unpleasant effects, which may also be said of its exhibition in rheumatism.

In most of the cases, where local appliances were resorted to, they were used as ointments rubbed over the affected nerve. In some, however, of a more severe character, the morphia was applied to a surface previously blistered. This was, in some cases of sciatica, attended with not only speedy but permanent advantage, and certainly seems highly preferable to Mr. Syme's (of Edinburgh) very farrier-like practice of the cautery.

In cardiac neuralgia the colchicum was especially useful, either with or without a few drops of the tincture of digitalis with each dose, when the action of the heart was much increased as well as irregular. A local application in these cases, of great efficacy in relieving both the inordinate action and intense pain, was the tobacco-leaf, slightly moistened and placed over the region of the heart, care always being taken to remove it so soon as any feeling of giddiness, faintness, or sinking, was experienced by the patient. For this simple and truly efficacious application, I am indebted to the late amiable and talented Dr. Macwhirter, of Newcastle.—*Prov. Med. and Surg. Jour. April* 15, 1846, *p.* 165.

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32.—ON THE TREATMENT OF CHOREA.—By William Smith, Esq., Bristol, Fellow of the Medical and Chirurgical Society of London, &c.

[The following are the indications of treatment pointed out by Mr. Smith, in this disease:]

1st.—Mental and moral quietude. All attempts to excite the intellect o feelings to be avoided. The extreme excitement about the brain to be subdued by occasional slight local depletion—by the application of cold water and by keeping the hair short. 2ndly.—The normal activity of the intestines and stomach to be restored, first, by an emetic of sulphate of zinc, to be followed by the employment of brisk purgatives of castor oil, and oil of turpentine; subsequently, small doses of sulphate, or oxide of zinc. 3rdly.—General tonic measures. Amongst these, cold water holds the highest place. It should not, however, be applied so as to give a violent shock to the nervous system; but applied either with a sponge or gentle shower bath. 4thly.—All measures which would have a tendency to congest the brain are to be avoided. Hence, I would not advise opium, except in cases where all tendency to congestion of the brain, or its membranes, is clearly absent. Even in these cases, camphor, in grain doses, may be advantageously substituted.

As before observed, cold water must not be employed in the terrifying and violent manner which was evidently its mode of employment in some cases translated from a foreign journal. All its beneficial effects may be obtained by a gentle shower bath; or if this cannot be borne, by sponging, or friction, for five minutes, in a wet sheet. Warm water pediluvia must not be neglected, as the state of the feet bears an important relation to the condition of the brain. The exercise should be such as nature prompts, and that only. No "physical education" quack should be permitted to rack the feeble muscular fibres; and above all should be observed the golden maxim of the great Latin physician, that the exercise should be "citra fatigationem." As a general rule, spirits, beer, and wine, for obvious reasons, should be avoided. In one case which I attended, I found the mother gave the patient, a very young child, strong beer, and spirits and water, "to brace the nerves," as she expressed it. This, of course, augments the cerebral excitement to a great extent. Sometimes, however, a little ale may be given with advantage. Strychnine may, when used with great caution, produce beneficial results; but when other means will succeed, we are not justified in the employment of such a powerful poison.

*Lancet, Jan.* 24, 1846, *p.* 92.

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33.—HYSTERIA TREATED BY THE APPLICATION OF COLD TO THE REGION OF THE UTERUS.

[M. Butignot, in the Journal de Medicine de Toulouse, mentions the case of a young woman, eighteen years of age, attacked for the first time with hysteria, which lasted seven days. She was quite blind during this period, but remained perfectly sensible. There was permanent contraction of the muscles of the trunk and extremities, with occasional convulsive movements. She could only swallow a few drops of liquid at a time, and speak a few words in a low voice. Treatment was of no avail, soothing and antispasmodic remedies did no good, but M. B. remarked on the fifth day that the paroxysm became aggravated about noon; he immediately gave quinine, under which treatment the symptoms gradually subsided. The following year she was again attacked as before, and from pain in the hypogastric region, with suppressed catamenia, he was led to infer the existence of over-excitement in the uterus. He ceased all treatment, and applied cold compresses to the lower part of the abdomen and upper part of the thighs. In half an hour the patient was relieved, and had no return of her symptoms.]

*Monthly Jour. of Med. Science, Feb.*, 1846, *p.* 136.

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34.—TOOTH-ACHE TREATED WITH VIENNA PASTE.—By CHARLES STOKES, Esq.

*It* may not be without interest to the medical profession generally, more *especially to those gentlemen* who practise in the country, to know that

very great relief may be afforded, in attacks of tooth-ache, by the application of anhydrous lime and caustic potass, commonly called pâte de Vienne. I have used it for a considerable period of time, and with almost uniform success. The method which I generally adopt for its application, consists in making a thick paste of the above powder, by means of pure alcohol. I then take a sufficient quantity, in the shape of a small pill, on the end of a silver probe, and introduce it into the cavity of the tooth, which should previously be well dried. After remaining in contact with the carious portion of the tooth for three or four minutes, the paste may be removed, and the mouth well rinsed with tepid water; after which fill the cavity with fine cotton. Great care is requisite to guard against any portion of the paste falling into the mouth, or upon the fauces, the effect of which would be instantly to create a painful slough. *Lancet, March* 21, 1846, *p.* 347.

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## ORGANS OF CIRCULATION.

35.—TREATMENT OF ANÆMIA.—By James Turnbull, M. D., Physician to the Liverpool Northern Hospital.

[In treating anæmia, Dr. Turnbull recommends the use of remedies which improve the general health and strength of the patient, and tend to increase the quantity, and improve the quality of the blood: these are, the vegetable bitters, the sulphate of quinine, and other tonics, but especially the preparations of iron, which have a powerful effect in increasing the quantity of that constituent of the blood which is deficient in anæmia.]

Iron, either in the metallic or oxidated state, forms the chief part of the hæmatosin, which is contained within the external envelope of the red globules. It is to the iron of the hæmatosin that the bright-red colour of the globules is owing; and it is a singular fact, which has been proved by analysis, that in anæmia the deficiency of the red particles is in close relation to the diminished quantity of iron in the blood. Becquerel and Rodier found, that while the mean quantity of iron in 1000 grammes of calcined blood from individuals in health, and corresponding with 141.1 of globules, was 0.565 of a gramme, the quantity in thirty one-cases of anæmia, with 94.7 of globules, was only 0.366 of a gramme in the same qnantity of calcined blood.

The preparations of iron seem to act in removing anæmia in a twofold manner. First, by their tonic properties, which they possess in common with the vegetable bitters, and several of the metallic tonics, such as the preparations of zinc and silver, all of which prove of service in anæmia, by increasing the digestive powers, and promoting the due assimilation of the food taken. Iron acts in addition in a more direct manner, by mixing with the chyle elaborated from the food, which thus becomes more highly charged with the principle which is chiefly concerned in the formation of hæmatosin. The iron of the hæmatosin is derived from our food, small quantities of this metal being found in many kinds of vegetable food which we are in the habit of using. It exists also, in a small quantity, in animal food; not, however, as a part of the cellular and fibrinous tissues which constitute meat, but as forming a constituent of the blood, some portion of which must always remain in the capillary vessels. There are also small portions of iron in milk and eggs. It is from these sources that the iron of the blood is derived; and as it scarcely enters into the composition of any of the solids of the body, the only purpose which it seems to serve, is the absorption of oxygen at the lungs, the transportation of it to the capillaries, and the excretion of carbonic acid. It appears not improbable, that deficient power of separating the iron from the food, and taking it into the circulation, may in some cases be connected with the origin of anæmia. Be this, however, as it may, there can be no doubt that the administration

of iron in a form in which it can be readily absorbed by the stomach and intestines is the most effectual means of increasing the quantity of globules, and removing the pallor and the functional disorders of anæmia. That the quantity of the globules is increased by the administration of the preparations of iron, has been proved by several observers, from analysis of the blood in anæmia before commencing, and after giving iron for a considerable time.

In some cases, it seems to be a matter of little moment which of the preparations we employ, for even when taken in the metallic form, it is acted upon by the secretions of the intestinal canal, and a portion dissolved and absorbed into the blood. In the state of soluble salt, it is, however, most readily taken up, and is most active. The sulphate of iron is one of the most useful and active preparations, and it may be given in the form of pill, with a bitter extract, such as that of gentian, or a sedative, such as hyoscyamus or conium, or with an aperient powder or extract, such as aloes or rhubarb, or with any of these combined. It may also be given in solution, with a bitter infusion, to which a little sulphuric acid has been added, to hold the iron in solution; or it may be exhibited in combination with the sulphate of magnesia or potass, the solution being acidulated with sulphuric acid. It may thus be given in combination with several of the medicines required in anæmia; and from this circumstance I have used it more frequently than any of the other preparations, and I have also found it one of the most efficient. The sesquioxide of iron is a convenient form when we have to treat anæmia in children, to whom it may be given with compound cinnamon powder, or with rhubarb, or mercury with chalk, where the secretions are deranged. I have also given it to adults along with the confection of senna, bitartrate of potass, and sulphur. This combination possesses several advantages inasmuch as it increases the secretions from the skin, kidneys, and intestinal canal, while it exerts a tonic effect by the introduction of iron into the system. The compound mixture of iron is a good preparation. It is milder than the sulphate, but it scarcely equals this, and the tincture of the muriate, in efficacy. This last preparation is one of the best, but it does not admit of being administered in so many forms as the sulphate. Several of these preparations seem to me to be often given in larger doses than is necessary, where we wish to obtain little effect beyond the absorption of the iron, which they contain into the blood. This observation applies especially to the sulphate and the muriated tincture, the astringent properties of which, along with the irritation produced by large doses, may, in many cases, rather tend to prevent absorption. The regeneration of the globules, when much diminished in quantity, must require a considerable time, and it has appeared to me that this object might be best attained by giving moderate doses, at short intervals, for a long period. That the efficacy of the preparation is not in proportion to the quantity of iron it contains, is proved by the fact, that many mineral waters are very powerful, though they contain less than a grain in the pint. I have several times given with good effect a grain or two of the sulphate of iron, with aloes, in the form of pill, twice or thrice a day, whilst at the same time I have exhibited, as often, a mixture containing the citrate or some other preparation.

In this way the sulphate has been exposed to the absorbent action of the whole intestinal mucous membrane, whilst the absorbent power of the stomach has been exerted upon the other preparations in solution. The preparations made from combination of iron with the vegetable acids are less efficient than those with the mineral acids, and Dr. Williams observes that the citrate and tartrate are more tardy in their operation. These are, however, milder in their action, and they may, therefore, be commenced with as a preparation for the others, which are more powerful, when there *is great sensibility* of the stomach, or of the system generally: for we not *unfrequently find that* the stronger preparations of iron, when first adminis-

tered, increase all the anæmic symptoms, especially those referrible to the stomach and head. The potassio-tartrate of iron may be given, along with the bitartrate of potass, when there is œdema of the ankles, or of the cellular tissue generally, and when we wish, therefore, to produce a diuretic effect. The iodide of iron is a preparation which combines in some degree the properties of iodine with those of iron, though the latter predominate. It seems to promote the secretions more than any of the others, and it sometimes acts as a diuretic. Where it has not proved too stimulating, I have found it one of the best tonics in the anæmia of phthisis. It may also be given in all cases of anæmia combined with enlargement of the glands, as well as where the tonsils are enlarged. In cases of chlorosis, with much torpor of the system, and where none of the symptoms, referrible to particular organs, are very prominently marked, it is often speedily efficacious; and from having found it cause the return of the catamenia in cases of amenorrhœa, where other preparations of iron had been used for a considerable time without effect, I am disposed to think that it may exert a directly stimulating action on the uterus. Dr. Williams states, that in many comparative trials he found the iodide of iron, in solution with syrup, the most speedily efficacious of the preparations of iron, and that by its use he has seen females restored from extreme pallidity to a rosy hue of health in less than three weeks.

There are other tonics which are useful in anæmia, such as the vegetable bitters, gentian, cascarilla, calumba, which may be given in conjunction with iron. In many cases, too, where there is much irritability of the system, the preparations of iron cannot at first be borne, as they cause heat of skin and thirst, or sickness, or headache; and when this occurs, it is necessary to promote the secretions, and to give the vegetable tonics with sedatives, in order to prepare the system for the exhibition of iron. Quinine is very useful in many cases; it seems, however, to act more through the nervous system, and less directly upon the blood, than chalybeates, and it does not continue to produce a beneficial effect during so long a period. It is most useful in the anæmia from lactation and from profuse menstruation, and in some of these cases it may be given in solution along with sulphate of iron and sulphuric acid. In most cases of profuse menstruation the preparations of iron are hurtful, and in these, quinine and the shower-bath are preferable.

When there is much depression or irritability of the nervous system, we must administer stimulant and antispasmodic, or sedative medicines; such as carbonate of ammonia, camphor, valerian, hydrocyanic acid, and hyoscyamus. The carbonate of ammonia is exceedingly useful in equalizing the circulation, which is very often irregular in anæmia, and in restoring the temperature of the extremities when they are cold.

Our plan of treatment should be, in general, regulated chiefly by the state of the digestive organs, as it is through this medium that we act upon the deranged condition of the blood. When the tongue is pale and clean, without redness at the point, and there is only weight and uneasiness during digestion, with or without eructation, but without sickness and vomiting, and the extreme sensibility of the nerves of the stomach, we may commence with the compound iron mixture, or with the muriated tincture in a bitter infusion, or with pills of the sulphate of iron, constipation being, however, in all cases, removed by some of the means that have been pointed out. In many such cases the preparations of iron in a short time remove the dyspeptic symptoms. In those where the sensibility is greater, where there is severe pain after taking food, and occasional sickness and vomiting, and when there is an extremely anæmic state, it will be well to lessen the sensibility, and restore, in some degree, the tone of the stomach, by sedatives and stimulants, combined with the vegetable bitters, before exhibiting any of the preparations of iron. The infusion of calumba may be given with carbonate *of ammonia, or with* soda and hydrocyanic acid, or with

tincture of hyoscyamus or the muriate of morphia. The addition of compound tincture of cardamoms, or of some aromatic tincture, will also, in many instances, prove useful. In this way we shall gradually lessen the sensibility of the stomach, and prepare it for the milder preparations of iron, or for the sulphate, which, in these cases, may be given in the form of pill with hyoscyamus and aloes, and in this way its action will be exerted less upon the stomach than upon the intestinal canal.

Where there is pyrosis, a similar plan of treatment must be adopted, but the secretions from the liver and intestinal canal must be more frequently promoted by rhubarb, magnesia, or carbonate of soda and mercury with chalk, or by colocynth and blue pill at night, followed in the morning by a draught with the infusions of senna and gentian, and the sulphate of magnesia, or tartrate of potass. In the cases of gastrodynia, with pain of neuralgic severity occurring at intervals, especially after taking food, hydrocyanic acid and the muriate of morphia are the remedies most generally useful. The nitrate and the oxide of silver are also of service; and a plaster of belladonna applied over the stomach will often remove, and will almost always relieve, the pain: belladonna, in fact, affords relief from almost all the neuralgic pains of anæmia, and is a most valuable remedy. Stimulating liniments, blisters, and the external application of croton oil, and tartar emetic, may also be tried when the pain is severe and obstinate; but leeches, though they may occasionally give a little temporary relief, should never be employed, unless there be some inflammatory irritation of the mucous membrane.

When there is irritative dyspepsia, with redness at the tip of the tongue, thirst, feverishness, and pain, or rather soreness at the stomach, it sometimes becomes necessary to apply a few leeches, and even to repeat the application in order to prepare the stomach for tonics. The nitrate of potass, and the muriate of ammonia, when given in these cases along with hydrocyanic acid, produce a feeling of coolness at the stomach, and assist powerfully in removing the inflammatory state of the mucous membrane. These medicines may be given at first in water, and afterwards in infusion of calumba or quassia, until the stomach can bear the milder preparations of iron in solution, or the sulphate in the form of pill. Milk and farinaceous food constitute the most suitable diet in the early stage of these cases. When, from the severity and persistence of the pain at the stomach, or from the occurrence of hæmatemesis, we have reason to suspect the presence of ulceration of the gastric mucous membrane, our treatment will not differ materially from that recommended for gastrodynia. Chalybeates should still, if possible, be given, and counter-irritation should at the same time be employed. Sulphate of iron, given according to the formula of Dr. Abercrombie, is, perhaps, the best remedy we possess; two grains of the sulphate of iron to be taken three times a day, in combination with five of aromatic powder and one of aloes. Much will also be gained by attention to diet, which should be easily digestible, and at the same time nourishing.

In cases where there is relaxation and increased secretion from the bronchial mucous membrane, the combination of the mineral acids with the other tonics is desirable. I have occasionally found the tincture of cubebs useful in checking the secretion, and have been in the habit of giving it, combined with oxymel of squill and compound tincture of camphor. Counter-irritation should also be used; and the following is the formula I employ:—One drachm of Croton oil, with four and a half of olive oil, and half a drachm of cajeput oil, made into a liniment, and rubbed upon the chest twice a day. Little modification of the general plan of treatment is required for palpitation of the heart, and for anæmic pulsation of the aorta. The removal of any complications connected with the digestive organs, and the use of chalybeates, are generally sufficient to take away these symptoms. The compound galbanum pill may be given to remove flatulence; *and when the circulation* is feeble, with disposition to faint, the carbonate

of ammonia, with valerian or ether, will counteract this, and tend to restore the circulation in the extremities.

When the nervous system is in a very irritable and easily excited state, so that the slightest noise is sufficient to startle the patient, camphor, in combination with the extract of hyoscyamus, will be found servicable, or the carbonate of ammonia may be given with tincture of valerian in camphor mixture or a bitter infusion. Sulphate of quinine in solution, along with sulphuric ether, may also be found of use. The vertigo, noises, and headache, are in general removed only by degrees, in proportion as the quality of the blood is improved, and unless unusually severe, they do not require any special treatment. It has been already observed, that in some cases the preparations of iron increase the head symptoms, and when this occurs to any considerable extent, or when the pain in the head is unusually severe, or the vertigo so great as to endanger the patient falling, we must proceed, in the exhibition of chalybeates, in the same gradual manner as where there is much irritability of the digestive organs. These symptoms of congestion are too often treated by depletion with leeches, which frequently increases the pain and feeling of giddiness, and necessarily proves always more or less injurious in a state of anæmia, owing to the removal from the system of a portion of all the constituents of the blood. In these cases, if the symptoms are urgent, or if a mild stimulant plan of treatment with purgatives, and followed by the cautious use of some of the preparations of iron, do not remove the unpleasant symptoms, a blister should be applied to the nape of the neck. This will seldom fail to give relief, and it is the remedy best suited to these cases, as it removes congestion of the vessels by producing repletion, without, however, taking from the blood the part which is deficient in anæmia. I may also observe, that in all cases of congestion, and even acute inflammation, occurring in anæmic persons, we should be sparing in the use of blood-letting, general or local, which is the most direct means of lessening the globules; and we should give the preference to the application of blisters, which, in anæmic individuals, are scarcely less efficacious than blood-letting, and produce depletion by removing from the blood the liquor sanguinis, without affecting the globules, which are already deficient, and can, in many cases of spontaneous anæmia, be renewed only slowly and with difficulty. A spirit lotion is a suitable application in cases of pain in the head from anæmic congestion or neuralgia.

The periodic neuralgic pains of the face are to be treated by the external application of belladonna, and by quinine, and the carbonate and other preparations of iron. The pains in various parts of the body, in the spinal column, and in the nerves issuing from it, are to be treated by stimulating and anodyne liniments, the belladonna plaster, and occasionally, blisters. We have still to notice those cases of anæmia in females, where suppressed, irregular, or scanty menstruation forms a prominent symptom. The secretions from the intestinal canal having been first evacuated by means of mild mercurial medicines, the bowels are to be kept open once or twice daily by means of the aloes and myrrh, or compound aloetic pill, or by the compound decoction of aloes.

Dr. Ashwell regards the combination of cordials with aperients as important, and recommends the following draught to be taken twice or three times a-week:—Powdered rhubarb; carbonate of magnesia; of each half a drachm; aromatic confection, one scruple; cinnamon water, nine drachms; compound tincture of cardamoms, one drachm. He recommends that the sulphate of iron should be taken three times a-day, in the dose of one or two grains, combined with extract of hop, aromatic confection, and a single grain of poppy or hyoscyamus extract. I frequently prescribe pills made with sulphate of iron, powder or extract of aloes, and extract of hyoscyamus, of each, one scruple, divided into twelve pills, and one taken three times a day. The superior efficacy of the iodide of iron in many of these cases has been already adverted to. From half a drachm

to a drachm of the syrup may be given three times a-day in water, or in infusion of quassia.

Where other preparations of iron have been injurious, Dr. Ashwell has found the carbonate in the following combination agree with the patient:—Carbonate of iron, eight grains; powdered ipecacuanha, one grain; mercury, with chalk, two grains. This powder to be taken once or twice a day. He also recommends, when the general health is somewhat restored, the use of the mustard hip-bath, or the local salt shower-bath, or the injection into the vagina of a drachm of liquor ammonia to a pint of milk. Where the uterus has seemed to require to be stimulated, after the restoration of the general health, I have in many cases found effectual, a draught with turpentine and castor oil.

The slight œdema of the ankles and of the cellular tissue generally, which is occasionally met with in anæmia, and chiefly in that form under consideration, viz., chlorosis, requires that the treatment should have especial reference to this complication. In these cases, there is, for the most part, considerable fulness of the vascular system, and the diminished proportion of globules is, perhaps, as much the effect of retention in the blood of the fluid part, from deficient excretion from the skin or kidneys, as from absolute diminution of the globules; at all events, the deficient excretion seems to be the cause of the anæmia. Our first object must be to increase the secretions from the bowels, the kidneys, or the skin, or from all of them, so that the specific gravity of the liquor sanguinis may be increased, and the natural relations between this fluid, the chyle, and the fluid of the globules, restored. The aperient best suited to these cases is the compound powder of jalap, alone or with calomel, or the bitartrate of potass. The potassio-tartrate of iron may also be given, along with the bitartrate of potass, to act as a diuretic. The sulphate of magnesia or of potass, given along with sulphate of iron, will act upon the bowels and kidneys, besides introducing iron into the system. Where the bowels have been very obstinate, I have combined a small quantity of elaterium with the sulphate of iron and aloes, in pills. The restoration of the healthy action of the skin is of the first importance in these cases, and the cutaneous transpiration should be promoted by baths, friction, and exercise. A few warm baths will cleanse the skin and prepare it for the excretion of the perspiration, which must afterwards be kept up by friction of the surface, and exercise. In several cases of chlorosis I have seen a single warm bath completely remove the œdema of the ankles.—*Lancet, April* 18, 1846, *p.* 427.

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36.—ON THE DEPURATION OF THE BLOOD.—By G. H. Barlow, M. D., Physician to Guy's Hospital.

[In a paper read before the Physical Society of Guy's Hospital, Dr. Barlow laid it down as an axiom, that the blood in the living body is freed from the superfluous noxious matter by two things, air and water. He observes]

We know that air, which supplies oxygen as the supporter of combustion, and food (by which is meant organic matter), which supplies carbon, the combustible, and azotic principles to replace the effete particles of the tissues, are the two great supporters of animal life. But, as a necessary result of these two processes of combustion and nutrition, we must have the products of the combustion (to wit., carbonic acid and water), and effete particles, whose place is supplied by nutrition, to account for: and the question arises, are these carried out of the system? and how? Now, I need not stop to show that the products of combustion, carbonic acid and water, are carried out of the system by the lungs; neither is it necessary to prove that the former of these acts as a poison when retained in any great quantity in the circulation. I would merely notice, that in order to

its being removed from the blood, this fluid must be exposed in the extreme branches of the pulmonary vessels to the air, or some gaseous fluid in the air-cells.

It may be stated generally, that air is the agent by which the gaseous impurities are removed from the blood. It must also follow from hence, that if the free access of air to the cells, or the free circulation of the blood through the lungs be impeded, the inquination of the blood by gaseous excretions must be one of the consequences. In speaking of the bile and the urine, it is perhaps hardly necessary that I should enter into the question of the sources whence the constituents of these secretions which exist in the blood are derived; a few facts which are, I believe, now generally admitted, will be sufficient for my purpose. The former of these secretions is a liquid, consisting of water, holding in solution certain soluble principles, which are uniformly present in health; these principles are, in part, though most probably not wholly, excrementitious; certain, however, it is, that the bile cannot be retained in the system, without causing considerable disturbance there. These principles are also present in healthy blood, and it is the office of the liver to remove them.

The urine, again, is a liquid, consisting of water, holding in solution various solid matters, which may be divided into two classes. 1. Those lower organic products which are formed in the extreme circulation, or, in the phraseology of Liebig, the products of the transformation of tissues, e. g. urea, urates, &c. And 2. Those soluble substances which are taken in with the ingesta, and which do not undergo decomposition in passing through the system, as, for instance, neutral salts, with inorganic acids. &c. The matters of the former class produce an injurious effect upon the system when not expelled from it, and I need hardly add that both these classes of substances are carried off by the kidneys. Now, it may appear needless to remark, that both the liver and the kidneys are adapted to excrete only liquids, and consequently that the elements of the bile and the urine cannot be removed unless they are brought to these organs in a state of solution, in which state also they must pass through their excretory duct. Hence it follows, that a continual supply of water is necessary for the depuration of the blood from those matters, which it is the office of the above named viscera to remove.

The course of the water fulfilling this office, may be traced as follows. That which is received into the stomach is, with such soluble matters contained in it as are not decomposed in the primæ viæ, taken up by the capillary branches of the vena portæ, carried onward with the blood through the portal trunk, and again dispersed through the ramifications of that vein in the liver; here a portion of it is again separated from the blood in order to form the solvent for the solid contents of the bile. Passing onward through the pulmonic and systemic circulations, the redundent water of the blood carries with it those undecomposed soluble matters which it contained at first, and receives, or rather acts as a solvent to, those products of the transformation of tissues which act as poisons if retained, and are, therefore, uniformly excreted from the system, or at least from the nourishing fluid. Holding these matters in solution, it is carried on with the current of the blood (furnishing, in its way, the water requisite for various secretions), to the other great excretory organs, the skin and the kidneys, where it passes out of the system, carrying with it, in solution, through each of these, the matters which that organ is more expressly designed to eliminate, but which, as has been already observed, it cannot separate unless brought to it in solution. We see, then, one important part which water performs in the animal economy, and as we have already pointed out that a due supply of atmospheric air, and its free access to the air-cells of the lungs, is necessary, in order to eliminate the carbonic acid which is the result of the combination by which animal heat is maintained, so is the due supply of water, and its free passage through the course which has just been laid down, necessary

to the removal from the system of those lower organic products, the result of the continual transformation of tissues necessary to the maintenance of the life and health of the body, but which act as poisons if they are not quickly expelled from the system; or, in other words, air and water are the agents employed by nature for the depuration of the blood. We have also seen that there is an apparatus provided for the application of each of these substances to the blood, in such a manner as to enable them to receive and hold in solution the substances which it is necessary that they should remove.

[The morbid consequences arising from imperfection in the apparatus for removing gaseous impurities from the blood, are of a two-fold character.]

1. Those arising from the inquination or non-depuration of the blood; and 2. Those produced mechanically by obstruction to the circulation of the blood through the lungs, as sanguineous congestions, effusions, &c. The effects of obstruction in the course which the water absorbed into the circulation pursues through the system, until it finally escapes by one of the excretory organs, have not, as far as I am informed, been traced by authors so systematically as those arising from impeded respiration. These morbid consequences may, as in the former case, be divided into two classes. 1. Those arising from retained secretion: 2. Those produced mechanically by obstructed circulation, and, in addition, there may be the direct effect of the primary lesion, which produced the obstruction.

The first entrance of the water into the circuit, which I have already traced, may be opposed, as it were, *in limine*, by obstruction high up in the intestinal tube, and under such circumstances, according to the above principles, we ought to have deficient secretion of urine. Let us now put this to the test of experience. In all the cases which I have met with, of constipation arising from obstruction situated in the upper part of the small intestines, and (as is common in such cases) attended with the speedy rejection of everything taken into the stomach, the urine has been nearly, if not entirely, suppressed; in some instances this suppression has been so complete, as to give rise to a suspicion that the disease was in the kidneys, and not in the intestines. (Guy's Hospital Reports, second series, vol. ii., page 384. See also Retrospect, Part xi., Art. 29.) Such cases present a remarkable contrast to those of constipation seated lower down in the canal, as in the case of twisting of the sigmoid flexure, in which the urine is never notably deficient, and sometimes remarkably copious. In the former cases (those of obstruction at the upper part of the alimentary canal), there is also a great deficiency in the quantity of bile.

The same deficiency in the quantity of the urine will also be found when any great impediment exists to the transit of the blood through the lungs and heart. In the earlier stages of the granular or Bright's disease of the kidney, we have, for the most part, an abundant secretion of urine, as far as regards the quantity; the abnormal condition of that fluid consisting in the absence of some of the solid ingredients of healthy urine, and the presence of one of the constituents of the blood. In the more advanced stage of the same disease, when the kidney has become contracted and indurated, the quantity of water excreted is defective, as well as that of the solid contents, but in both states the depuration is imperfect.

There is an important practical inference to be drawn from the above remarks, and one, too, which is confirmed by experience, namely, that when the circulation through the liver is materially impeded, those substances which are commonly administered as diuretics cannot readily pass into the the general circulation, and, consequently, do not reach the kidneys in sufficient quantity to produce the effect for which they were administered; after, however, having unloaded the intestinal capillaries, which are in fact the origins of the portal vein, by means of a brisk purgative, we are often enabled to procure diuresis in cases where we should have failed without *such a preliminary* measure. The above remarks are perhaps equally ap-

plicable to the obstruction to the circulation, through the lungs and heart; such obstruction being always attended with great engorgement of the liver and consequent embarrassment of the portal circulation. The direct consequences of the derangement of the pulmonary circulation, and impediment to the function of respiration, would, however, be probably the more urgent. Finally, when the kidneys themselves are diseased, we may have the whole secretion, i. e. the water as well as the solid contents retained, or we may have the water passing off by the kidneys and carrying with it some of the ingredients of the blood, the urea and other constituents of healthy urine remaining in the system. In such cases I need hardly add, that the symptoms of retained secretion are often most apparent.

*Med. Gaz., Jan.* 23, 1846, *p.* 156.

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37.—INORGANIC AFFECTIONS OF THE HEART.—By O'B. Bellingham, M. D., one of the medical officers of St. Vincent's Hospital.

[There are a number of cases which simulate heart disease, where no organic alteration exists; and it is of great importance to distinguish there, since the treatment required in the one case is perfectly useless or injurious in the other.]

The conditions or states of the system under which symptoms simulating heart-disease are most liable to occur, are—

1st. States of anæmia. 2d. The plethoric state. 3d. Disordered states of the digestive organs. 4th. The nervous and hysterical habit. 5th. Debilitated states of the system however induced.

[With respect to the anæmic condition, Dr. O'B. Bellingham says—]

The state of the system denominated anæmia is, perhaps, more frequently than any other accompanied by symptoms simulating disease of the heart. This term literally means the absence of blood; but as it is now understood, includes those cases in which not only the amount of blood is diminished, but also those in which the solid constituents are deficient, and where the proportion which the watery parts bear to the red globules or fibrine is altered. The condition of the blood in anæmia is exactly the reverse of that found in plethora; in the latter, the amount of blood in the system is greater than natural, the blood-vessels are distended, and the red globules superabound. In the other, the red globules and the fibrine, or the former only, are diminished, the amount of blood in the system is likewise less than in the normal condition, and the vessels are in an unfilled state. The cardiac phenomena which accompany the several forms of anæmia have their origin in the unfilled state of the vessels, and in the diluted and watery condition of the blood. In order to maintain or to restore the balance of the circulation, the heart's action becomes more rapid, as the organ endeavours to make up by velocity what it wants in strength.

*Plethora.*—Symptoms of heart-disease may, however, be the result of a directly opposite condition of the system to that just described. In plethora, or the plethoric state, instead of a diminution of the actual amount of blood, or of one of its most important constituents, the red globules, there is an increase of both. "It has been generally supposed (Andral observes) that it is the fibrine which is augmented in plethora; such, however, is not the case, it may amount to its maximum, but never exceeds it. The quantity of albumen is not augmented either, the globules are the only element increased in quantity; they are increased to the full physiological limits, and sometimes exceed it."

[In speaking of disordered states of the digestive organs producing symptoms simulating heart-disease, he alludes to disease of the abdominal organs, and believes that what is often attributed to sympathy is the result of the operation of a mechanical cause.]

Thus, in aggravated cases of dyspepsia, if the patient eats too freely, or

partakes of unwholesome or indigestible food, a paroxysm of palpitation is very likely to follow. Now, we know that when the stomach is distended by food or flatus, it may interfere with the descent of the diaphragm, confine in some degree the heart's motions, and thus give rise to palpitation; if, in addition, the colon is distended by fæces or flatus, the abdominal aorta may be compressed, when the left ventricle will find a difficulty in expelling its contents; the action of the heart will be exerted in order to overcome the obstacle, and palpitation will ensue: or a distended stomach or colon might compress the ascending vena cava, the effect of which would be to diminish the amount of blood which reaches the right side of the organ, and nearly similar results would follow as are observed in cases of deficiency of blood, the action of the heart would become more rapid, and palpitation would be felt. If hepatic disease or derangement is combined with the foregoing, the venous circulation in the abdomen will be still further impeded, embarrassed, or retarded; while the introduction into the circulation of a vitiated chyle will deteriorate the blood transmitted to the right side of the heart, and augment the cardiac irritability. In addition, we know that the heart, as well as the digestive organs, are supplied by branches from the great sympathetic, by which a chain of nervous communication is maintained between them; and as the semilunar ganglion and solar plexus lie in the immediate vicinity of the stomach, distension of this organ by food or flatus might stretch or compress the nervous branches derived from this source, and so react upon the central organ of the circulation.

*Nervous and Hysterical States of the System.*—Another condition of the system in which symptoms simulating heart-disease are liable to occur, is that usually known under the name of the nervous habit or temperament, sometimes more vaguely termed the irritable habit.

[Functional derangement of the heart, connected with nervous habit, is most frequently met with in the female and in the young, rather than those advanced in life.] *Dub. Med. Press, Nov.* 19, 1846, *p.* 321.

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38.—CASE OF HYPERTROPHY OF THE HEART.—By Dr. Croker King.

[Dr. King relates a case of hypertrophy of the heart, of great interest, particularly from the size of the organ, which weighed when emptied of its contents, forty-four ounces and a half. In giving a description of the case, he observes,]

The paroxysm being fairly established, the appearance and position of the patient were striking, and expressed an amount of suffering which Dr. King believed to be unequalled: the head thrown back, the neck extended, the entire spine bent in a curve backwards, like an exaggerated state of opisthotonos, the arms elevated at right angles from the body, the fingers expanded and rigid, the dark and prominent eye, the marked projection of the thyroid cartilage from the forcible extension of the neck; the violent action of the heart, absolutely causing the individual to vibrate at each pulsation; the carotids bounding and throwing forward the integuments of the neck; the violent distension of the superficial arterial branches, enabling their course to be traced, in fact, so general was the arterial dilatation, that at each beat of this powerful heart, the individual appeared to undergo a general enlargement, and thus to resemble one enormous aneurism.

Coupling with the above, the expression of the patient's countenance the suppressed breath, the perspiration, which, at first stood in large drops on, and ran down the face and neck, the whole embodied a scene which might possibly be depicted with the pencil, but defies the pen. These paroxysms were induced by the slightest circumstance; a cause which from its unimportance, could scarcely be considered capable of producing the slightest

mental disturbance, being capable of giving rise to them. Such as receiving a visit from even his most intimate friend; at one time drinking, at another eating, appeared to be an exciting cause; and so much did this unfortunate gentleman dread the occurrence of a paroxysm, that I have known him to remain for several days without food, dreading the consequence of taking it. The paroxysms could frequently be warded off by occupying his mind, with any circumstance calculated to fix his attention, and over and over again have I succeeded in doing so by such a stratagem.

All through this case the most marked relief was experienced from stimulants, narcotics and antispasmodics: whereas any treatment calculated to reduce or depress was injurious, and appeared to favour the frequent recurrence of the attacks. So great was the relief experienced by the patient from the use of stimulants, that some years ago, without any pleasure in intemperance, or wish to indulge in intoxicating liquors, he gradually increased his potations to sixteen or eighteen tumblers of punch daily: however, he soon became sensible of the injurious effects of so much alcohol on the system: an attack of delirium tremens determined him to abandon such habits at all risks. He accordingly substituted opium, the dose of which he was equally anxious to limit, which, with some exertion, he kept down to one ounce and a half of the tincture daily; the other preparations, the acetum, black drops, or the salts of morphia, had not the same effect as the laudanum; the doses should be larger in proportion, and even then, on account of the absence of the spirit, they were not as efficacious. It is worthy of remark that during the entire progress of the above case, there was no evidence of interrupted circulation, no dyspnœa, no venous or capillary congestion; anasarca certainly set in towards the close of the case; it had not extended above the hips.

*Dublin Hospital Gaz., Jan.* 1, 1846, *p.* 154.

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39.—ON A SYSTOLIC MURMUR IN THE PULMONARY ARTERY.—By Dr. Ormerod, Demonstrator of Anatomy at St. Bartholomew's Hospital.

[From a series of cases published by Dr. Ormerod on this subject,]

The following inferences seem naturally to arise. First, that a murmur may be heard in the pulmonary artery in many cases of anæmia and its kindred maladies, as also in acute rheumatism, which murmur, there are good reasons for concluding not to arise from organic disease, as well on account of the variable nature of the murmur itself, as most conclusively on account of the rarity of disease of the pulmonary valves. The second inference is, that the existence of a murmur in the pulmonary artery gives grounds, in some cases, for presuming that murmurs audible elsewhere in the same heart will disappear; in fact, that they do not depend on organic lesion of the valves to which they are referred. This statement will need a little farther exposition. And, first, as to the cause of murmurs generally. If they are not owing to organic changes, to what are they to be referred?

Whatever be the cause of the murmur being produced, the way in which the cause acts is by setting the blood in a state of vibration. The tones thus produced, whether in the blood-vessels or the blood itself, constitute, in all its varieties, what we call a murmur. And just as a wire may be fixed so as to vibrate on the least impulse, and continue long in that state of vibration, or to require a strong and frequently-repeated impulse to establish and maintain that state; so is it with fluids, and, what concerns us more immediately here, with the blood. The mere propulsion of this fluid from the ventricles into the large vessels, and its movement along the vessels, arteries, or veins, may suffice in some cases to set it in vibration—to produce, in fact, a murmur. And this happens, as well shown by Andral, especially in those cases where the blood is of extreme tenuity. In other cases the blood requires more violent disturbance to throw it into vibration, such as is

effected by the projection of a rigid valve into the stream, or by the sudden regurgitation of part of the stream, as in the case of imperfect closure of the aortic valves. Here, then, are the two cases:—the attenuated blood vibrating from a common cause, insufficient to affect healthy blood; and blood of a normal density vibrating from a superadded cause.

Insisting on the fact of the pulmonary valves being generally free from disease, murmurs referred to this situation must be explained on some other supposition than that of structural change. On the exact mode of production of this vibration there is no space here to speculate. The peculiar theory which any one may advocate is a step anterior to that with which we would commence, viz., the audible effect of these causes, whatever they may be assumed to be. We may suppose the ventricle to be contracting with unusual force, with unusual rapidity, to be temporarily (for the variable nature of the murmur will not let us suppose it permanently) dilated, or affected in any way so as to throw the blood into greater vibration; or the blood itself may, by its tenuity, be more susceptible of vibration. There may be any cause but permanent structural change in action.

But before applying these conclusions to the other orifices of the heart, we must again refer to the table of cases, for we can apply them safely only under certain restrictions. It has been already noticed that the murmurs did not begin at the same time at all the situations at which it was eventually audible. In the majority the murmur began at the same time in more than one situation, and so far this is favorable. For if a murmur arises in any part of the heart, except at the pulmonary orifice, during acute rheumatism, and subsequently a murmur appears at this latter situation, we must look on that case in a less favourable point of view than what we would on a case in which they were all developed simultaneously; and this will be more necessary, if, in addition to the attenuating effects of rheumatism on the blood (which reduces its solids in the same way, though not to so great an extent, on the average, as does chlorosis),* venesection, which produces analogous effects on this fluid, have been employed.

With this restriction we may apply what has been said of the pulmonary orifice, to the other orifices of the heart. It is possible that the murmurs heard in other parts of the cardiac region may have their origin in the same or similar functional disturbances in which it is probable, nay, almost certain, that the murmurs of the pulmonary artery take theirs. On this question, or recurring to the words of our second inference, what grounds there are for presuming that a murmur co-existent with one in, but referred to any other situation than, the pulmonary artery, may ultimately disappear, the above tables may throw some light.

It is true that of the first sixteen cases only seven had all the murmurs fairly watched out (the phrase accurately expresses the process), but in the whole of them changes were witnessed in the murmurs, and chiefly in those murmurs which, judging from their situation, were less likely to prove of a functional origin than those in the pulmonary artery. Let us look at the recorded auscultations of any cases which have been watched for a considerable time till death has given an opportunity of confirming the diagnosis of valvular disease. The murmur on which the diagnosis was founded may have varied in intensity, it may have varied in character, from a musical have become a blowing sound, or the reverse, but it will never be found that it varied in situation. It may perhaps have been inaudible in its own situation, owing to a tranquil state of the circulation, but never will it be found to have left its own, and taken up, so to say, a new position.

It cannot be too strongly urged, for on this fact all the practice of auscul-

* Simon, Medizinischen Chemie, ii. 175, 208.

| | Solids. | Fluid. |
|---|---|---|
| Healthy standard, | 210 | 790 |
| Rheumatic blood, average, | 194 | 805 |
| Chlorotic, do. do. | 172 | 827 |

tation is based, that each valve is a distinct centre of disease, and that the signs of the disease of each valve show themselves at particular places. If a murmur is heard one day at the apex, another day at the base, and another not at all, or perhaps at both places, clearly, considered in themselves, these murmurs are to be looked upon in quite a different light from one which is always referred to the same situation. May be they are all alike functional, but they cannot all depend on structural changes of the valves. Such can only be the case with the stationary murmur. And if, of these variable murmurs, one may be exchanged for another, why may not both be simultaneously removed? And if, of more murmurs than one in the same heart, one be manifested in the pulmonary artery, and be almost to a certainty independent of structural change; is it not at least possible that the murmur at the apex, or that in the aorta may be produced by the same or a similar cause to that in the pulmonary artery. The existence of a murmur in this artery shows that there is a cause in operation, independent of organic disease, sufficient to produce a murmur, and gives *some* grounds for presuming a functional origin even of such murmurs as have not yet by their variations already declared the nature of the cause which has produced them.—*Edinburgh Med. and Surg. Jour., Jan.* 1846, *p.* 107.

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## ORGANS OF RESPIRATION.

### 40.—BLACK PHTHISIS IN COAL MINERS.—By A. Makellar, M. D.

[In our Part XII., Art. 30 and 31, will be found some interesting papers by Guillot, Makellar, and Brockmann, on this subject. The following article is a continuation of that by Dr. Makellar, who relates ten cases of the disease, among others, which occurred to him. We will confine our extracts chiefly to those parts of the paper which are illustrative of this particular carbonaceous deposition.]

These cases extend over a period of eleven years, all of them exhibiting, with some slight variation, the same character of disease, and proceeding from the same cause—inhalation of carbonaceous matter. Some of the cases occurred as far back as the years 1833-'34, while the last case came under my notice within these twelve months. Of the ten patients, six were engaged at one period with stone-mining, and four were entirely coal-miners; eight expectorated carbonaceous matter, and two did not show any indication of black infiltration from the sputum; six exhibited most extensive excavations of the pulmonary structure; and only three general impaction of these tissues, with numerous small cysts containing black fluid; the tenth, I regret to say, was not examined, owing to neglect in communicating in time the death of the patient, which took place a few weeks ago. These morbid appearances exhibit three stages of the disease. The first is that where the carbon is confined to the interlobular cellular tissue, and minute air-cells, producing cough, dyspnœa, slight palpitation of the heart, and acceleration of pulse, while, at the same time, the patient continues able to prosecute his daily employment. The respiratory sounds, in this state of the chest, are loud and distinct. Such a condition of the pulmonary structure is often found on examination in the Carron iron-moulder, who has been killed by accident, or has died from some other disease, having been subjected in the course of his employment to the inhalation of carbonaceous particles.

The second is that stage where the softening has commenced, the several impacted pulmonary lobular-formed small cysts throughout the substance of one or more lobes, the contents of which may either be expectorated or remain encysted, giving rise to most harrassing cough, laborious breathing, and palpitations, dull resonance of chest, and obscure respiratory murmur. The third and last stage, is that in which the several cysts in one or more

lobes have approximated each other, forming extensive excavations, the prominent symptoms of the disease becoming considerably aggravated, and the powers of the system sinking to the lowest degree of exhaustion.

[The first case, George Davidson, aged 32 years, first seen in May, 1834, when he was labouring under bronchial affection, but continued in his employment as a stone miner in a coal pit for more than two years, when he was obliged to desist, from general debility. At this time he expectorated bloody tough mucus, without any tinge of black matter. Whilst under treatment the cough increased, night sweats came on, the pulse became weak, and he was emaciating rapidly; when during a paroxysm of the cough, black sputa made its appearance, which relieved him for some time. Dr. Makellar observes:]

During the greater part of the period he was under my charge, he continued to expectorate black matter, of the consistency of treacle, mixed with mucus in considerable quantity, and I would suppose, taking the average of each week, that he expectorated from ten to twelve ounces daily of treacle-like matter. I had the curiosity, during my attendance on this patient, to separate the mucus from the carbon, by the simple process of diluting the sputa with water, and thereafter separating and drying the precipitated carbon. I was enabled by this means to procure about one and a-half drachms of a beautiful black powder daily, and in the course of a week, I had collected near two ounces of the substance. This process I continued for some weeks, till such time as I had procured a sufficient stock of this remarkable product of the pulmonary structure, and I am certain that the same quantity, if not more, could have been obtained till his death, in December, 1836. It is undoubtedly a striking phenomenon connected with the pathology of the chest, that the human lung can be converted into a manufactory of lamp black!

This case resembled in many of its features, one of tubercular phthisis, more than is generally found in the disease before us, there being cough and expectoration, dyspnœa, sharp pain in the thoracic region, colliquative sweats, and great emaciation, while, at the same time, the pulse was slow and weak, not exceeding thirty-six in the minute for a week before death. No hectic heat of skin, but an extraordinary depression of the arterial action, arising evidently from the redundancy of carbon deposited in the pulmonary tissue, preventing the proper oxygenation of the blood circulating in the organs, and thereby producing a morbid effect on the whole system, which sufficiently explains the cachectic condition of the body.

*Post-mortem examination twenty-four hours after death.*—The lungs were removed with difficulty on account of the strongly adhesive bands attaching them to the ribs, and in handling them they conveyed the impression of partial solidity:—several projecting, irregular firm bodies, were felt immediately beneath the suface of the pleura, and there was also present emphysematous inflation of the margins of the upper lobes. In transecting the upper lobe of the left lung, it was found considerably hollowed out (to the degree of holding a large orange), and containing a small quantity of semi-fluid carbon, resembling thick blacking, with the superior divisions of the left bronchus opening abruptly into it. Many large blood-vessels crossed from one side of the cavity to the other, to which shreds of parenchymatous substances were attached. The inferior lobe was fully saturated with the thick black fluid, and it felt solid under the knife, and several small cysts containing the carbon in a more fluid state were dispersed throughout its substance, in which minute bronchial branches terminated, and by which this fluid was conveyed to the upper lobe, and thence to the trachea. In examini right lung, the upper, and part of the middle lobe were pervious to a carried on, though defectively, the function of respiration, while the lobular cellular tissue contained the infiltrated carbon. The inferior l of the middle and almost the whole of the under lobe were densely i ed, so that on a small portion being detached, it sank in water. Bot

represented, in fact, a mass of moist soot, and how almost any blood could be brought under the influence of the oxygen, and the vital principle be so long maintained in a state of such disorganization, is a question of difficult solution.

In tracing the various divisions of the bronchi, particularly in the inferior lobes, some of the considerable branches were found completely plugged up with solid carbon; and in prosecuting the investigation still farther, with the aid of a powerful magnifier, the smaller twigs, with the more minute structure of cells, were ascertained to contain the same substance, forming the most perfect racemes, some of them extending to the surface of the lung, and to be felt through the pleura. Case 2d was one of unsuspected carbonaceous accumulation in the lungs, the history of which proves the fact, that the disease, when once established in the pulmonary structure, continues to advance till it effects the destruction of the organs, although the the patient has not been engaged in any mining operations for many years previous to his death.

*Post-mortem examination.*—On removing the left lung, which was difficult, from the strong adhesive bands, it seemed, from its weight and softness, to contain a fluid; and on making a longitudinal section of both lobes, a large quantity of thick, black matter, similar to black paint, gushed from the opening, exposing an almost excavated interior of both lobes. The carbonaceous matter contained was in quantity about an English pint, and the lung, when emptied, became quite flaccid, and very light. On examining more minutely with the magnifier, open-mouthed bronchial twigs, and very small blood-vessels, were seen plugged up with solid and fluid carbon, and from the appearance of the morbid structure, it was manifest, that the ulcerative process had effected a complete disorganization of the bronchial tubes of every calibre, while the smaller arterial vessels had alone suffered, leaving the larger ones entire.

On examinig the right lung, which seemed much similar in weight to the left, and on making a section throughout its three lobes, the morbid appearances varied in each. The upper lobe was infiltrated with carbon into the interlobular cellular tissue, leaving the bronchial ramifications respirable, and lubricated with frothy mucus. The middle lobe presented a solid appearance, and contained a mass of indurated black matter, of the size of a largish apple, and consistency of consolidated blacking. The surrounding parenchymatous substance was disorganized, and undergoing the process of softening.

[The foregoing remarks will, in some measure, show the nature of these extraordinary cases.]

The third case comes under the second division of this disease, where the irritative process resulting from the foreign body pervading the lungs, had advanced so far as to produce a variety of small cysts, and circumscribed indurated masses, the former containing *fluid*, and the latter *solid* carbon, and it is evident in tracing its progress, that there must have been a very rapid increase within the system in the carbon originally deposited in the pulmonary structure by inhalation. There was very limited black expectoration shortly before death, and this merely the contents of a few small cavities communicating with the bronchial ramifications, while both lungs were extensively infiltrated with that matter which, had the patient lived, would have produced general softening, and more extensive excavations by the coalition of the various indurated lobulæ. In the fourth case it is evident, from the symptoms and history, that the patient had contracted the disease of which he died at an early period of his life, and that during the fifteen years he refrained from mining operations, the pulmonary structure retained the carbon inhaled while labouring in the [illegible] is one of the many cases which can be produced [illegible] that the foreign matter once deposited in the [illegible] of accumulative impaction *and ultimate* [illegible]

carried on till it is entirely disorganized. This case comes under the thi division of the morbid action, viz., where extensive excavation of the stru ture is produced.

The seventh case is remarkable from the length of time (twenty years more) that the carbon was concealed within the pulmonary tissue, and al because he had never been engaged as a stone-miner; so that this cas along with others, illustrates the fact, that where the morbid action is t result of lamp-smoke, from the combustion of coarse oil, and not gunpo der smoke, the disease is much slower in its progress, but ultimately fat

[We consider these cases altogether remarkable, and exceedingly w told; and for further information we would strongly advise the reader turn to the original papers.]—*Monthly Jour. of Med. Sci., Nov*, 1845., *p.* 8

[From these cases there is no doubt that *black phthisis* is the result of t inhalation and retention of foreign substances in the structure of the lun In another paper communicated by Dr. Makellar, he observes:]

While engaged in committing these remarks to paper, I have been led my investigations to compare the various kinds of labour carried on coal-pits with the under-ground operations of many of the railways n in progress throughout the kingdom; and being convinced of the very in rious effects produced upon miners while prosecuting these operations confined situations where gunpowder is used, I shall be much surprise the same results do not follow the hazardous undertakings connected w railway tunnelling, where gunpowder is had recourse to, and in the cou of years find in our public hospitals cases of carbonaceous lung aris from this cause.

[From the whole of his experience in these cases, Dr. M. draws the f lowing conclusions:]

1st, The black matter found in the lungs is not a secretion, but con from without. The pigmentum nigrum of the ox I find to lose its col entirely, and to leave only a quantity of white flocks, when rubbed in a m tar with chlorine water. Sepia, which is a preparation of the dark-colou liquor of the cuttle-fish, was also bleached by chlorine, but the black mat of the lungs was not destroyed or bleached in the slightest degree by ch rine; it even survived unimpaired the destruction of the lungs by putref tion in air. 2nd, This foreign matter probably varies in composition different lungs, but in the cases actually examined, it seems to be little e than lamp black or soot. It does not appear, as far as I can ascertain, t any of the continental physiologists are familiar with the disease now der our consideration. Several of them, both ancient and modern, dis vered black matter in the pulmonary tissues, but not connected with exhibiting the black phthisis. I have long entertained the belief, that if carbon is once conveyed into, and established in the parenchyma of lungs, that organ commences the formation of carbon; thus increasing amount originally deposited.

With regard to medical treatment, little can be done after the disease passed its first stage. Early removal from the occupation, and proper tention to nutrition, alone seem to hold out the hope of prolonging the of the patient; but if there be carbon lodged in the pulmonary tissues, th is a certainty of its sooner or later proving fatal. Attention to the state the digestive organs, and using every means to remove the dyspeptic sy toms, which are prominently presented throughout the various stages this disease, are indispensably requisite; and, as to nutrition, the nature the diet should be as generous as possible. Anodynes and expectora are the only remedies which seem at all efficacious in allaying irritati With a view to remove urgent symptoms, venesection has repeatedly b had recourse to, but in almost all instances I would say, with decide bad effects. Blood-letting does harm, producing general debility and ra sinking.—*Monthly Jour. of Med. Science, Feb.*, 1846, *p.* 91.

41.—PHTHISIS ANTAGONIZED BY DISEASE OF THE LIVER.—By M. CATTELOUP.

[In the post mortem examinations instituted by M. Catteloup in Algeria, he seldom found tubercular deposit in the lung coincident with hepatitis, or its results; and in one pathological condition of the liver—fatty degeneration—very common in the liver of dysenteric patients, who had exhibited marked symptoms of phthisis, he was much struck at the entire absence of tubercle. He says:]

In the course of our researches we have remarked the frequency of a change of structure in subjects, who, offering every appearance of phthisis, yet were quite exempt from the tubercle—I mean the yellow-looking and fatty liver. Every one is aware of the rarity of tubercles in Africa. Can it be that they are replaced by a morbid condition of the liver whose frequency is almost as great relatively to other affections, as is that of pulmonary tubercles compared to other diseases in France. Do the modifiers of the animal economy in Algeria possess the power of destroying in the thoracic lung the disposition to contract this pathological condition, but at the expense of its production in the abdominal lung? In France, the coincidence of the fatty liver and phthisis is frequently observed: in Algeria this morbid condition is observed alone, no disease existing in the lung. The rarity of the prevalence of pulmonary phthisis in Algeria may be judged of by the fact, that M. Haspel, in 1841, only found three persons affected with it out of 1480 hospital patients; and only one of 138 deaths was caused by it. So, in 1842, in all the hospital establishments of Algeria, of 8485 patients there were but thirteen phthisical; and but 10 out of 871 deaths occurred from phthisis!—*Med. Chirur. Rev., Jan.* 1846, *p.* 67.

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42.—INFREQUENCY OF PHTHISIS IN MARSHY COUNTRIES.

[In Retrospect, Part IX., Art. 44, there is a notice of a letter read before the Academy of Medicine, addressed to the president, by M. NEPPLE, on the infrequency of phthisis in marshy districts, confirming what Brera said some years ago on the infrequency of phthisis in Venice.]

M. Ollivier remarked that there were not more than seven or eight phthisical patients among twelve or fourteen hundred annually admitted into the hospitals of the town; the rest were affected with intermittent fever, or rheumatism. Dr. Antonio Salvagnoli Marchetti, in an essay illustrating the tables of the medical statistics of the Tuscan Maremma, noticed in the British and Foreign Medical Review, for January, 1846, corroborates the same fact; it appears that of 81,731 sick, there were only 100 cases of phthisis, or one to every 817. According to Broussais, in Algiers, where intermittents prevail, of 40,000 sick in the French army, only 62 were phthisical, that is one to every 650 sick, and one death to 102 from other causes. In France, there is one to five from other causes, whilst in England the mortality from phthisis is a sixth part of the whole community.

Dr. Forbes remarks, that all these conclusions are vitiated by the fact that the observations only apply to overt or confirmed disease, post-mortem examinations not being general; whereas tubercles may have existed in those dying of fever, without being detected. Moreover, where so many are carried off in early life by fever, it is to be inferred that some might have had phthisis had they lived.]

*British and Foreign Med. Review, Jan.*, 1846, *p.* 210.

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43.—PULMONARY AFFECTIONS CAUSED BY DYSPEPTIC DERANGEMENTS.

[Dr. Prout makes the following observation in speaking of the manner in which protracted derangement of the assimilative organs may induce pulmonary disease.]

The imperfectly assimilated chyle, in passing through the lacteal system, either does not undergo the necessary changes by which chyle is converted into blood; or is malconverted into the comparatively insoluble pseudo-albuminous matter of struma, which in passing through the lungs, lays the foundation, perhaps at first mechanically, of tuberculous deposition and future accretion. *Dr. Dick's Papers, Med. Gaz. Feb* 20, 1846, *p.* 327.

44.—ON PARACENTESIS THORACIS.—By H. M. Hughes, M.D., Assistant Physician to Guy's Hospital.

[Pleuritic effusion, without very careful examination, is very liable to be mistaken; its progress is often so insidious, and its symptoms so latent, it may, and frequently is, confounded with consumption, liver disease, or indigestion. Whatever merit is due to the proposer of the operation, whoever he may be, it is the late Dr. Thomas Davis, who merits the praise of pointing out how the function of the lung may be restored and deformity prevented. In 1844, a paper was published in Guy's Hospital Reports by Mr. Cock and Dr. Hughes on this subject, and very soon after a paper was read before the Medico-Chirurgical Society, by Dr. Rowe, in which the operation was recommended for the same purposes. Dr. Davis was in the habit of leaving a piece of elastic catheter with a stopper in the wound, and drawing off a little fluid daily, but Dr. Rowe and Mr. Cock immediately close the wound and repeat the operation as often as is necessary. Mr. Cock and Dr. Hughes believe that the admission of air into the pleural sac is injurious, while Drs. Davis and Rowe assert that it is not attended with any bad consequences: the former assert that the admission of air keeps up the compression, to some extent, on the lung, which it is the intention of the operation to obviate. Dr. Hughes observes,]

It is with a view of withdrawing the fluid before firm adhesions have been formed, before the lung has been strongly bound down, and plastered over with a thick coating of fibrin or albuminous matter, that the operation has been recently recommended, in contradistinction to that of merely relieving urgent distress or of preventing suffocation. Until a comparatively recent period the operation, simple as it is, and harmless as it has been proved to be, had not been performed until almost every other mode of relieving the patient had been tried without effect, and the powers of the patient had become greatly exhausted. Hence it happened that the operation was not only generally unsuccessful, but was considered an affair of much importance, and of considerable danger. If operations for other complaints had been thus unreasonably delayed—if that for hernia, for example, had been almost uniformly deferred till gangrene had taken place, it may be fairly assumed that surgeons would not have had so many cases of that disease to point out as triumphs of their art.

I have never seen a single case in which, when it was performed in the manner recommended by Mr. Cock and myself, it was attended with the slightest risk, though in an earlier period of our practice I know that a case occurred in which the individual fainted, and was affected with alarming collapse, in consequence of the fluid been drawn off too rapidly through a large canula; and though one person certainly contracted an attack of bronchitis, followed by pneumonia, from exposure during operation, I believe that in most persons the "risk" of the operation is not greater, and that in many persons it is really not so great, as the risk of a prolonged mercurial course.

"That the admission of air may rekindle the inflammation" we believe, and "that its admission may convert the adhesive into the suppurative inflammation" we also believe; but we are very far from thinking that "its *admission cannot be* prevented." It is, indeed, a rare circumstance with *us for a single bubble of* air to enter the pleura—though two, three, or four

pints of fluid have been withdrawn; and though in many cases the operation has been performed several times, and in one case as many as thirteen or fourteen times. In this individual air did, on two occasions, enter the pleura during the act of coughing or a sudden involuntary gasp. Air is there still, and has remained there ever since: we are, indeed, far from being certain that in this individual there may not have been a very minute communication with one or more bronchial tubes, but we have never had any evidence of the air having been absorbed, and the patient's own strong impression is, that since it first entered it has never been removed. The fluid in this case remains perfectly inodorous.

The reason why air does not necessarily enter the pleura, and the mode in which, with proper care, it can be prevented doing so, are both, I think, sufficiently evident. Unless the lung is capable of full and free expansion, we do not attempt to draw off all the effused fluid. We remove, indeed, only so much as the expanding lung and the surrounding compressed organs are capable of replacing. The opening is carefully watched, particularly during the act of inspiration and of coughing; and when the stream begins to fail, the body is turned towards the punctured side, till there is at length an alternate flow and stoppage of the stream during the acts of expiration and inspiration. When this occurs we withdraw the canula—when, in fact, there exists a tendency for the external air to enter the cavity, that tendency is at once stopped by closing the aperture. Sometimes it is true that a considerable portion of fluid is thus left behind. This remaining fluid, if not absorbed, must be removed by a second operation, which is so slightly painful, and when properly and carefully performed, is so simple, and is usually the means of affording such great comfort, that I have never known a patient object to it who had once gone through the ordeal.

[On compression of the parietes of the chest and abdomen, Dr. H. says,]

Now, from having observed that an attaek of coughing has often followed the exercise of this process, in consequence, as we presume, of the greater expansion of the lung which is thereby induced, we now believe, that this part of the directions may be advantageously omitted, and that it is better to take away only so much of the liquid as flows spontaneously by inclining the body. Secondly, with the view of preventing cough, arising from the too sudden expansion of the lung, and of allowing the organ gradually to accommodate itself to the enlarged space, we are now in the habit of applying a flannel bandage with moderate firmness around the chest, after the operation is completed. In reference to the operation itself, I have been accustomed to prescribe to myself certain rules and precautions, which may be, perhaps, advantageously here introduced for the direction of those who are not accustomed to see it performed:—

1.—It is well never to propose it without having previously inquired into the history of the case, and minutely investigating the general symptoms, as well as carefully ascertaining the physical signs. 2.—After this has been effected, and all the ordinary means of diagnosis have been fairly and fully brought into requisition, the trochar should never be introduced before the exploring needle has been employed for the purpose of confirming the correctness of the diagnosis previously made. 3.—The puncture of one side of the chest, excepting under circumstances of imminent danger, should never be made before it has been clearly ascertained that the lung of the opposite side of the chest, if not quite free from disease, is at least capable of carrying on the respiration. 4.—The fluid should be drawn off slowly through a small-sized canula, if the effusion is thin and serous, and through one of rather larger size if the fluid is thick and purulent. 5.—So much only of the fluid should be withdrawn as flows spontaneously without the admission of air. 6.—The escape of the fluid should be favored by an inclination of the body towards the punctured side. 7.—It is desirable, after the operation to support the chest with a moderately tight flannel bandage, to keep the patient *in bed and desire him* not to talk for a period of twenty-

four hours; after which, if his complaint would not on other accounts confine him to his bed, he may leave it without inconvenience or danger. With these rules or precautions the operation may be performed, in very many cases, with great benefit; and in all cases, as far as I am able to judge, from a pretty extensive opportunity of observing its effects, without danger. *Med. Gaz., Feb.* 13, 1846, *p.* 281.

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45.—THE TREATMENT OF BRONCHITIS IN INFANTS.—By C. M. Miller, Esq., Stoke Newington, London.

If the bronchitic affection is very severe, a warm bath, and of calomel. one grain, powder of ipecacuanha, two grains, with a little compound tragacanth powder, every four hours; if less severe, three times a-day, and lengthen the time as the patient improves. Many will say this will act as an emetic; it does for the first or second dose, but not afterwards. If the disease does not yield a little on the first day, I generally apply one, or at the most, two leeches to the hollow of the neck above the sternum. Out of some dozens of cases which I have this year treated on this plan, I have not lost one, nor have I had occasion to apply any escharotic in a single instance; and although I am now limiting myself to the last twelvemonth, yet my success has been nearly equal for some years past. Nothing is to be feared from the effects of the calomel, unless profuse diarrhœa should supervene, and then, of course, it must be remitted; but I have rarely seen this until the virulence of the disease has been subdued.

Now, then, for my plan of blistering. I believe I am not the only one who has seen the ill effects of a blister on an infant, and many, I dare say, have said that they never would apply a blistering plaster again to a child. I say to such, you may do it, and with safety too, if you will place between the blistering plaster and the child's skin a piece of tissue paper; the blister will do its duty well, and you will have nothing to annoy you; or if you still feel timid of trying this, dip a piece of blotting-paper, the size you require, into acetum cantharidis, and by applying it to the part, in 10 or 15 minutes you will have a safe blister raised. This I have found an admirable plan where the effect is required quickly; indeed, I remember one case of croup where the vital powers were failing, in which it had a very good effect. *Lancet, Dec.* 27, 1845, *p.* 703.

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46.—INTERNAL USE OF CANTHARIDES IN PNEUMONIA.—By Dr. Mendini.

The author does not give this remedy as a certain specific in pneumonia, nor as applicable to all the varieties of the disease, nor as capable of taking the place of all other therapeutic agents. On the contrary, he distinctly warns us, that the administration of cantharides does not supersede the necessity of bleeding. In some of his patients, he had had recourse to bleeding four, six, and even ten times. He also observes, that cantharides only succeeds when the affection is of a decidedly inflammatory character, the constitution plethoric, and the general reaction well marked. In cases where the case is complicated with the gastro-enteritis, or marked susceptibility of the primæ viæ, the remedy is contra-indicated.

In what particular way does cantharides act in pneumonia? Dr. Mendini believes its action to be absolutely the same with that of tartar emetic; that is to say, it depresses and moderates the circulation. He does not hesitate to state, that the power of antimony in this respect is even less marked than that of cantharides. "I have often," he says, "been obliged to suspend the use of cantharides, owing to its hyposthenic effect proving too powerful; a *times,* indeed, I have been obliged to combat this effect by means of stimuil, *such as laudanum combined* with the tincture of canella. But I have rarely

been obliged to have recourse to similar precautions when using the tartar-emetic.

Dr. Mendini has now tried cantharides in seventy cases of pneumonia, and that in a country where the inflammatory element is in such activity as to render repeated bleedings necessary to overcome the disease. In not one of the cases did the peculiar effect of cantharides on the urinary organs prevent the continuance of the remedy. The pain and heat experienced by the patient at first in the genitals disappeared in the course of forty-eight hours, and priapism never lasted longer than the third or fourth day. The author never witnessed these symptoms continue, in any of his patients, beyond the period first stated, although the ordinary dose of the remedy was continued. He generally found it of advantage, he says, for the first few days, to assure the patients that the inconveniences they suffered in the region of the pelvis were the mere effects of the disease, which, descending, was taking leave of the body in that way! The following is the general mode in which Dr. Mendini administered the remedy:—Take of whole cantharides from twelve to eighteen grains; boil in half a pound of water, so as to make an infusion; to which add a pound of almond emulsion, and half a pound of mucilage. This is to be taken at intervals in the course of twenty-four hours.

However great may be the confidence which both the name of the author, and the utter want of any thing exaggerative in his statements, inspire us with, we very much doubt if many practitioners will follow in his steps, in the treatment of a disease against which we already have a sufficiency of means, as certain as they are inoffensive. Even that which appears to Dr. Mendini an argument in favour of the remedy—viz., that its too great efficacy will cause it to be proscribed—only inspires us with mistrust. We only add, and we do so most emphatically, if any one feels inclined to hazard this treatment, he must—unless under a heavy responsibility—commence with doses much smaller than those indicated by the author, and he must attentively watch the development of any symptoms in the genito-urinary organs.—Annali Universali di Medicina, as quoted in Gazette Medicale, January, 1846. *Monthly Jour. of Med. Science, Feb.* 1846, *p.* 123.

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### 47.—AMMONIA IN ASTHMA.

[M. Guérard has used ammonia with success in a hundred cases of asthma. The editor of the *Annales de Therapeutique* saw him apply it to an old woman almost suffocating, in consequence of pulmonary emphysema—the relief was instantaneous. It is not necessary here to particularise the method adopted by M. Guérard in applying the ammonia, as we should be afraid of recommending it to be tried; and particularly as we think he is mistaken in his explanation of its *modus operandi*. We should rather adopt the views of the French editor, which we subjoin.]

M. G. applies the remedy in the following manner:—He dips a small pencil of charpie into pure liquid ammonia, and then instantaneously into a glass of water, after which he immediately passes it to the back of the throat, touching rapidly the velum, uvula, and œsophagus to a greater or less extent. He seldom has occasion to repeat the operation; when there is merely simple emphysema the improvement has been permanent. The pencil should be neither carried too deeply into the throat, nor allowed to remain too long in contact with the soft parts, more especially the posterior wall of the pharynx; the reaction resulting from such an application is, at times, followed by the most frightful symptoms, menacing instant death.

[The editor proceeds to state that]

Three questions naturally arise from the preceding facts. First, In what cases of asthma may ammonia be prescribed with advantage, and in what cases it is hurtful, or of no use at all? Second, What is the true principle

of action of the remedy in such cases? and Third, Is it indispensable to apply the ammonia to the throat in order to obtain its good effects?

From daily observation it is evident that asthma frequently occurs in a state of complication with organic lesions of the heart and aorta, or with tubercles; at other times, it exists without these complications, although otherwise accompanied with emphysema or catarrh. In the latter case, the disease may be denominated simple, the catarrh and emphysema being regarded as symptoms of the affection. From what we have observed at La Charité, it appears that it is only in cases of the latter description, that is to say, simple asthma (idiopathic of authors) that ammonia effects a cure, or affords great relief.

In regard to the second question, as previously remarked, we can only regard the result produced by the ammonia as a dynamic effect, acting immediately on the diseased organ, an action analagous to that obtained by Scarpa from the same remedy in congestive amaurosis. And the proof that its action is dynamic, and neither mechanical nor nervous, is just this, that if any other irritating remedy, the actual cautery, for instance, boiling alcohol, tincture of canella, or cloth steeped in hot wine, the same results will not be obtained; far from that, the disease will be aggravated. Two things, moreover, must be considered regarding the medication in question, and these are, its physico-chemical and local action, which is evidently irritant, and its dynamic action, resulting from the speedy absorption of the ammonia by the bronchia, which it reaches with the air. The first of these is unimportant in a therapeutic point of view; it is inconvenient, and would certainly be hurtful, were it not counteracted by the dynamic action, affecting not only the lungs, but the whole system. What, then, is the nature of the dynamic action of the ammonia? From the effects we have witnessed in asthma and congestive amaurosis we have no doubt that it is hyposthenic. In one or other case you have a humoral evacuation (mucus, tears), and afterward, results similar to those produced by other hyposthenic remedies. If, instead of ammonia, boiling alcohol be used, you will likewise have humoral evacuation, but the disease is increased. From what has been said, then, it follows that the direct application of the ammonia to the pharnyx is not indispensably necessary in order to obtain all the good expected from it in asthma, its absorption by the stomach will lead to the same results, if it be administered in sufficient doses. M. Rayer has already obtained good effects from it in this way, but the dose being too small, they have not been permanent. The remedy must, therefore, be given in sufficient quantity, through other absorbing media, not excluding the respiratory organs themselves, by placing a phial filled with the medicine near the nostrils, or disseminating it through the air; the rectum, skin, and stomach, may conjointly be made the means of repeatedly administering the remedy. It is well known, for instance, that belladonna, applied to the neighbourhood of the orbit, causes dilatation of the pupil, produces its hyposthenic effect upon the globe of the eye and the brain, exactly in the same way as if it had been administered by the rectum, stomach, friction over the extremities, or injected into the bronchia. Ammonia forms no exception to this general law of effects produced by absorption.—Annales de Therapeutique, Nov. 1845.

If the reader will turn to Art. 67, Retrospect Part XII., he will find a good hint by Mr. Hicks, of Southwark, taken from Mr. Taylor, respecting the inhalation of the fumes of ammonia in poisoning by prussic acid, when the patient cannot swallow. The same remedy may also be used in asphyxia, and in many other cases where its influence is required in the lungs, as for example, in cases of chronic pneumonia and bronchitis, where the parts will often be benefited by its stimulation. In cases, too, where the voice is almost lost, we have found that the fumes of ammonia have acted most beneficially, even when, probably, at the same time we were giving *tartar emetic.]* *Monthly Jour. of Med. Science, Feb.*, 1846, *p.* 125.

48.—PRACTICAL REMARKS ON THE TREATMENT OF CYNANCHE.—By C. T. MAKIN, Esq., M.D.

[Dr. Makin has for some time adopted a certain method of treatment in all cases of cynanche, and speaks very highly of its results. The plan is not generally known, and we here give it in his own words:]

Free incisions of the tumefied parts within the throat, I have never yet seen fail of giving instant relief. I do not mean mere scratches, but one or more bold incisions, varying in depth and extent, according to the urgency of symptom and tumefaction of structure. The operation, if it can be called such, is easily performed by any one possessed of the average amount of dexterity. The following will, I believe, be found the easiest method:—The blade of a long-handled, round-pointed scalpel is covered with adhesive plaster to within three-quarters of an inch of its extremity. The index finger of one hand is used to depress the root of the tongue (this must be done firmly, as the tonsil frequently swells most in a downward direction, causing dysphagia to a greater degree than if alone increased by swelling in the transverse diameter). The instrument being then introduced, its edge directed upward and inward, one or more free incisions are made, commencing below, and carried in a curve convex outward and upward along the tonsil and velum, to the base of the uvula. The time occupied is not more than two or three seconds. The pain is inconsiderable, the relief always immediate, and, in the majority of cases, permanent. The bleeding is encouraged by gently gargling the throat with any warm liquid. The depth of the incisions must of course be regulated by the amount of swelling and urgency of symptoms. It is, however, advisable in every case to divide the mucous membrane effectually, and even penetrate a short way into the substance it invests. The flow of blood I have generally found to be inconsiderable, when compared with the relief experienced. Whether ulceration be present or not, I have never hesitated, if the concurrent symptoms seemed to demand such interference, at once to cut through the ulcerated part if it lay in the line marked out by the eye for incision.

Out of some dozens of cases treated by me in this manner, during the last twelve months, none have proceeded to the formation of matter. I can call to mind many which have been attended with superficial ulceration, previous to my being consulted, but none which ulcerated after incision was practised. I have observed that the viscid secretions poured out by the structures in question when in the state of inflammation, has been materially increased in quantity soon after the division of the congested membrane. The reason being obvious, need not be here mentioned. With regard to gargles, I have lately discontinued their administration, believing that any benefit derivable therefrom is extremely problematical; while, during their use, motion of parts which ought to be wholly at rest is unavoidable. The diet should be liquid, and taken at as long intervals as possible. On the medicines necessary for cure, secundum artem, I have nothing to say, save that it is to be borne in mind that deglutition is difficult and painful.—*Lancet, Dec.* 20, 1845, *p.* 673.

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## ORGANS OF DIGESTION.

### 49.—ON DIFFERENT KINDS OF FOOD.

[The following is one of the simplest and best explanations of some of the more common kinds of food which we have seen; it is from the Agricultural Gazette.]

We have been requested by several correspondents to state what kinds of food may be used instead of potatoes. In order that an efficient substitute be provided for any kind of food in general use, it is necessary that

the nature of foods generally be understood. Chemical and physiological science have succeeded in pointing out the fact that there are two great classes of secretions elaborated by the vegetable kingdom that are essential to the food of man and of all other animals. The one class of these secretions contains carbon as a distinguishing ingredient, and may be called carbonaceous; the other, in addition to carbon, hydrogen, and oxygen, contains nitrogen, and is called nitrogenous or azotised. The first class is taken into the stomach as food, and being carried into the blood, meets there with oxygen gas, unites with it, forms carbonic acid gas, and, during this process, gives out heat. This is the source of animal heat. Unless this heat is developed in due quantities, the animal perishes. These secretions and their composition are as follows :—

| | Carbon. | Hydrogen. | Oxygen. |
|---|---|---|---|
| Starch | 12 | 10 | 10 |
| Sugar | 12 | 9 | 9 |
| Oil of Fat | 11 | 14 | 1 |

These substances enter largely into the food of the whole animal kingdom. Starch is contained in the seeds of most plants, as of the wheat, barley, maize, rice, &c., and in the various other parts of plants used as food by man. It can be easily separated from plants, and is done so for use as food, in the form of tapioca, arrow-root, potato starch, wheat starch, sago, &c. Sugar is also separated from the sap and fruits of plants, in which it is so generally contained. Oil is secreted by, and separated from, a number of plants, as the olive, almond, &c., and is also formed from starch and sugar by the animal, and deposited in its body in the form of fat.

The nitrogenous secretions are found not only in plants but in animals. The fact is, they are simply conveyed from the plant to the animal in its food, without undergoing any change. The nitrogenous secretions form the fabric of the body. Nerves, muscles, blood, &c., are principally composed of them. Their object in blood is not the keeping up of animal heat, but the nourishing, the building up of the body. It is only as food contains these secretions that it is nutritious, that it can fulfil the demand for supply by the continual waste of the body in the actions of life. These secretions, though called by different names, as fibrine, albumen, and caseine, and varying somewhat in their physical properties, are modifications of one substance, protein. Protein is composed of 48 parts of carbon, 36 hydrogen, 14 oxygen, 6 nitrogen. The other substances are easily convertible, one into the other, and only vary in possessing different proportions of sulphur and phosphorus, in addition to the elements of protein.

In all the food man eats, he requires that it should possess in one form or another, these two classes of secretions. The carbonaceous secretions are constantly needed in all food, to keep up the heat of the body; the nitrogenous for building up its fabric. The quantity of the latter required depends on the waste going on in the system, and when this is great, as in severe bodily exertions of any kind, the demand for them will be the greatest. As an average, it has been stated that man requires eighty per cent. of carbonaceous matter, and twenty per cent. nitrogenous. This is about the proportion of such secretions found in wheat flour, and it is undoubtedly this relation of the two classes of alimentary matters that renders it the staple food of man in so large a proportion of Europe. Of other things eaten as food by man and animals, the following table from Dr. Playfair, gives the relative quantities of carbonaceous and nitrogenous matters :—

100 parts contain :—

| | Water. | Nitrogenous Matter. | Carbonaceous Matter. | Ashes. |
|---|---|---|---|---|
| Peas | 16 | 29 | 52 | 3 |
| Beans | 14 | 31 | 52 | 3 |
| Lentils | 16 | 33 | 48 | 3 |
| Oats | 18 | 11 | 68 | 3 |
| Barley | 16 | 14 | 69 | 2 |
| Potatoes | 72 | 2 | 25 | 1 |
| Turnips | 89 | 1 | 9 | 1 |

It will be seen from this list how low in the scale of nourishing and respiratory elements the potato stands. It does not contain more than a fifth of the nutritive matter of oats, a tenth of wheat, and a fifteenth of peas, whilst its carbonaceous or respiratory elements are more than one-half of those seeds. It will be found, then, that although potatoes are cheap, yet in as far as they serve the purpose of food, they are really as dear as any other article on the list. If potatoes are a penny a pound, and bread twopence halfpenny, which is about the price they are in London just now, bread containing ten times the quantity of nitrogenous matter, and twice the quantity of carbonaceous matter, is the cheaper article of diet. Bread, then, under such circumstances, may be successfully substituted for potatoes. But there are other articles on this list cheaper than wheat and its flour. Peas may be obtained at six shillings a bushel, half as cheap as wheat, and contain fifteen times the quantity of nutritious matter found in potatoes. A pound of peas at one penny, and a pound of tapioca at fourpence, would contain (together) as much alimentary matter as fifteen pounds of potatoes.

The flesh of animals is composed chiefly of protein (fibrine), and is consequently more nutricious than vegetable food. It needs, however, carbonaceous matter with it, and this is the reason that potatoes, and other vegetables containing starch, are so frequently eaten with it. The tables in the Athenæum, in the review of an absurd book, recommending a vegetable diet, referred to "Veritas," in the Gardener's Chronicle of Nov. 22d, are not now to be relied on, as they contain no distinction between carbonaceous and nitrogenous principles, and are in many points evidently incorrect. With regard to the use of blood as food, there can be no doubt of its being available for this purpose. It contains about ten per cent. of protein, which, by proper cooking, may be made as available to the system as any other kind of food. In the above table there are one or two substances omitted, which might be used as food. Maize has a composition closely resembling oats and barley. It contains more oil than either; and thus, in proportion to its protein, more carbonaceous or combustible matter than either of those grains. It is the food of a large class of the community in America, although they prefer feeding pigs on it, and thus obtaining its protein and oil second-hand, in the form of pork. It may be obtained in London at about two-thirds of the price of wheat. Rice is another grain used as food. It contains only two per cent. of protein, and in this respect is not more nutricious than the potato itself. It could only be the food of an indolent people, unless it was eaten in the quantities that potatoes are in Ireland. It would, in this way, be a very expensive substitute for the potato.

There is a class of foods which are not often eaten in this country on account of their presumed indigestibility, which, however, when cooked properly, are not exposed to this objection, viz., nuts which might be eaten. All the forms of nuts, as the walnut, chestnut, cocoa-nut, &c., contain large quantities of oil, and also starch and protein. On account of their price, there is but one of these which could be used extensively in this country, and that is the cocoa-nut. This nut is the entire support of the inhabitants of many countries where it grows. It may be purchased in Ceylon at the rate twelve shillings per thousand. The cost of carriage could not be much and they might, therefore, become a cheap article of diet. The average amount of meat in the nut is about ten ounces; but we have no accurate analysis of its composition, so as to be able to compare it with potatoes or other foods. We have recently heard of a gentlemen in England, who has lived on these nuts for a twelvemonth, and who finds himself in stronger and better health than ever he was in his life. This proves that such things might be eaten with safety, was there need.

Among the carbonaceous and nitrogenous substances used as food, there are two, gum and gelantine, which resemble the others in composition, the

first belonging to the carbonaceous, and the last to the nitrogenous class, but which either do not enter the blood at all, or when they do, neither serve to keep up the animal heat, nor to build up the fabric of the body; gummy and gelatinous substances, therefore, cannot become substitutes for the other forms of carbonaceous and nitrogenous matter. Gelatine is found abundantly in the growing parts of animals, in the skin, in the bones, and cartilages; and these parts of animals are used for making soups, jellies, &c. It should, however, be remembered, that although gelatine contains nitrogen, it does not contain protein, and it is questionable as to whether it can in any way be used as a nutritious agent. The experiments of the French Commission satisfactorily proved this. Dr. Buckland is therefore wrong when he states that bread made with powdered bones, which contain gelatine, is more nutritious than before; nor is bone-broth so nutritious as it has been sometimes regarded.—*Agricutural Gazette.*

*Northern Jour. of Med. Science, Feb.*, 1846, *p.* 110.

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50.—HINTS ON THE DIAGNOSIS AND TREATMENT OF ABDOMINAL AFFECTIONS.—By Dr. Griffin.

[In the treatment of acute inflammation of the bowels by purgatives, there is a danger of the irritation being propagated from the mucous to the serous surfaces, consequently their use as derivaties cannot be taken advantage of, as in affections of the head and chest. The danger Dr. Griffin points out, and believes that "people do not recover because they are purged, but they are purged because they recover."]

Of the use of opium in peritoneal enteritis, Dr. Griffin entertains the highest opinion, and relates several cases in which very large and frequent doses were given with the happiest results. In one case, first two grains and then one grain doses were given every two hours, until thirty-two grains had been taken, two or three grain doses having been resorted to on the occurrence of a relapse. In the case of a girl, ten years of age, whose condition had been previously much aggravated by the use of purgatives, and who appeared to be sinking, twenty drops of laudanum were given, and in half an hour a grain of opium. Sound sleep ensued, and the patient, who had seemed almost moribund, was saved, the opiate being continued for some time at longer intervals. To a boy, æt. five, in whom peritonitis occurred during the last stage of typhus fever, probably from perforation, grain doses were given with a successful result. Dr Griffin does not propose opium as a substitute for general or local bleeding where these can be borne, but as a most useful remedy where this is not the case; or where the disease continues in spite of their institution. The state of the bladder should be carefully watched, as retention of urine is not of unlikely occurrence during the use of full opiates.

Dr. Griffin does not entirely condemn the use of purgatives, even in the early stages of enteritis, but the greatest advantage is to be derived from them when the force of the disease is broken, and we wish to empty the bowels of their contents. This he effects by mild purgatives, combined with henbane, but he would feel disposed to defer doing this till a later period, if there was no injurious distension present. He concludes, and general experience confirms the conclusion, that in the early stages of enteritis, purgatives do not act until the inflammation has been subdued by depletion, or the disease has otherwise subsided; while, as soon as this has been accomplished, the bowels act spontaneously, or by the use of mild purgatives: that if purgatives are exhibited early, and act freely, death may nevertheless ensue, unless the disease is arrested by other remedies: that purgatives may, per se, occasion inflammation, or cause its recurrence; and that inflammation of the bowels may be subdued without any evacuation at all, and the bowels may continue confined for three or four days,

without any injurious distension. In distinguishing nervous affections of the abdomen from inflammatory, by tenderness on pressure, Dr. Griffin points out the simultaneous existence in the former of tenderness in a corresponding portion of the spinal column; and where this exists there is a state of system scarcely compatible with inflammation. He says:]

In determining the diagnosis of abdominal inflammation, where both pain and tenderness on pressure exist, we should always endeavour to ascertain —1. Whether there be any pain or tenderness on pressure in the corresponding portion of the spinal column: because, if there be, although it may not absolutely decide whether inflammation be present or not, it is quite sufficient to account for both the pain and tenderness, without assuming the existence of any inflammation. 2. Whether, if there be no spinal tenderness or pain, the soreness of the abdomen be superficial or deep-seated, which may be ascertained with tolerable certainty in all cases, by an examination directed to that end. And whether, if both superficial and deep-seated, as it usually is in peritoneal inflammation, gentle, steady pressure with the flat of the hand can be easier borne, than with the points of the fingers. In pain and soreness from affection of the spinal nerves it commonly can be so borne, while in peritonitis every kind of pressure, and even the weight of the bed-clothes, is very distressing. (And yet one of the best means of distinguishing hysterical tenderness will often be found to be the observation of how the slightest degree of pressure gives rise to the expression of intense suffering, although the countenance does not always corroborate this. The tenderness in these cases is quite cutaneous. —*Rev.*) 3. Whether the boundaries of the pain or soreness extend beyond what the suspected inflammation could produce. Thus, if inflammation of the liver be suspected, and we find the soreness extending to the ileum or groin, or to the opposite side of the abdomen, it is obvious the soreness cannot be attributable to mere disease of that organ. Again, if the whole abdomen be tender to the touch in a case otherwise closely resembling peritonitis, and we find the tenderness is not confined to the abdomen, but extends over the hips and lower extremities, it is obvious, we can attach no importance to the abdominal soreness as a sign of inflammation. (This is a most valuable sign from which we have often derived the greatest assistance.—*Rev.*) Finally, it should be recollected that constipation may depend on mere loss of power in the intestinal nerves, as well as on spasm, obstruction, or inflammation, since the treatment in each case must necessarily be modified, or directed by the supposed cause of this symptom.

[The reviewer remarks that]

Of the antiphlogistic powers of opium, Dr. Griffin expresses his high opinion: and states that for many years he has almost entirely relied upon it for the subdual of enteritis and peritonitis. He bleeds first, however, in subjects who will bear depletion, employing calomel also when the disease is very intense, and resists opium powerfully—suspending this as soon as the symptoms give way, and giving the opium alone, whereby troublesome salivation is usually prevented. In rheumatic inflammation it is as useful. In acute inflammation of the mucous membranes opium was formerly supposed to be contra-indicated; but the cases published by Dr. Stokes and others, of cure of inflammation of the mucous membrane of the bowels with exhausting diarrhœa, show the propriety of the practice. Dr. Griffin attributes the evil effects which have followed the use of opium in these inflammatory affections to its having been given in too small doses, which, in cases of mucous phlegmasiæ, suppress the diarrhœa without subduing the inflammation to which this had even acted as a relief. But in these, as well as in serous inflammations, bleeding must be premised where the strength will admit of it, applying at the same time warm poultices to the abdomen. In other cases, in which bleeding is out of the question, and opium seems powerless, as in bad dysentery, a combination of ipecacuan and opium acts sometimes surprisingly. Dr. Griffin alludes to two cases

in which he gave three grains of opium with from three to five of ipecacuan every two hours with the best effect.

[Although opium is contra-indicated in inflammatory affections of the cerebro-spinal system, from its tendency to produce congestion, yet when combined with sufficient doses of tartar-emetic, it allays nervous irritation, quietens the action of the capillaries, and procures sleep. Its effects are wonderful in many cases of puerperal mania, delirium tremens, and the advanced stages of fever. It is to Dr. Graves we are indebted for pointing out the value of this combination.]

Dr. Graves directs four gr. of emet. tart. and two drachms of laudanum to be mixed with half-a-pint of camphor mixture, two table-spoonfuls of which are to be given for the first dose, and one every half-hour afterwards, until the delirium abates, or some signs of drowsiness appear.

[Dr. Griffin believes that the restorative power of opium in exhaustion from hæmorrhage, depends principally upon its property of producing congestion of the brain, and thus restoring tension to the cerebral vessels.]

*Medico-Chirugical Review, Jan.*, 1846, *p.* 44.

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51.—HERBACEOUS ALIMENT IN THE TREATMENT OF CHRONIC DYSPEPSIA.—By Dr. Dick.

It is surprising what an efficient adjunct to medicinal treatment herbaceous aliment is in forms of chronic dyspepsia dependant on, and complicated with, a hyperæmic or (sub-) inflammatory condition of the mucous membrane. If the diagnosis has been just, the effect of such a diet is strikingly efficacious, otherwise harm may follow. Herbaceous diet judiciously employed allays many anomalous nervous symptoms, sensibly abates that uncomfortable heat of stomach which persons suffering from this form of indigestion so much complain of, and is a valuable corrector of those four morbid conditions of the mucous membrane chaleur, rougeur, tumeur, douleur, which, according to Broussais, characterise gastritic disorder. Under the term herbaceous aliment, I include among other things, grapes, apples, pears, strawberries, pomegranates, &c. The best time to employ this aliment is about an hour before breakfast, and in the intervals of meals.

The only inconveniences to be guarded against, on the first adoption of such a diet by persons long improperly disused to it, are flatulence and fæcal accumulation in the intestines, which, though unpleasant, are void of danger. A little soda and ginger will obviate the first mishap. The latter is to be prevented by making the change gradually, and by careful mastication; and if it occur in spite of these precautions, by recourse to a pill of aloes, capsicum, and quinine. Persistence in the use of this aliment will teach the stomach duly to digest, and the bowels to evacuate it, while various nervous symptoms will vanish under its employment; an unwonted vigour and freshness is felt, and the state of the stomach and bowels are sensibly improved. I know of no derangement of the digestive organs in which a prolonged abstinence from herbaceous articles of food is judicious, or even safe. From such abstinence, on the contrary, I have witnessed the worst effects—foul tongue, ill-tasted mouth, ill-odoured breath, perspiration of a heavy animal smell, blotched skin, scanty turbid urine, stools insupportably fœtid.—*Med. Gaz.*, *March* 27, 1846, *p.* 548.

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52.—ON CHOLERA.—By James Copland, M.D., F.R.S.

[Dr. Copland, in the last number of the Dictionary of Medicine, says on this subject:]

I conclude this part of the inquiry by stating the inferences which may be drawn from an extensive view of what is known of this pestilence, as it

has appeared in Asia and in Europe, and from intimate observation of its phenomena, as they lead to various considerations, calculated to arrest its progress, and to remedy it, when an attack has not proceeded too far in the destructive processes in which it has been shown to terminate. A. The pestilential cholera seems to have been propagated by an animal miasm, or effluvium of a peculiar kind, emanating from the bodies of the affected; and this effluvium being inhaled with the air into the lungs, paralyzes these organs, and acts as a poison on the class of nerves which supplies the respiratory, the assimilating, the circulating and secreting viscera, vitiating also the whole mass of blood, and thereby occasioning a specific disease, which, in its turn, gives rise to an effluvium similar to that in which itself originated; which, also, in like manner, perpetuates its kind, under the favourable circumstances of predisposition, ærial vicissitudes, &c., and thus a specific form of disease is propagated far and wide, as long as predisposing, concurrent, and determining causes favour its propagation. B. The morbid impression of this effluvium or poison upon the nerves of organic life, and probably the effects of its introduction into the current of the circulation, are of a sedative kind, rapidly destroying the vital energy of the former, and vitiating the latter, and thereby giving rise to the characteristic phenomena of the malady. C. The impression of the effluvium on the organic class of nerves, and the vitiated state of the blood may be viewed as the proximate cause, not only of the disturbance evinced by the respiratory, the secreting, the assimilating, and the circulating functions, but also of the morbid actions of the stomach and bowels, and the copious serous discharges from these organs, as well as of the muscular spasms, the sinking of all the vital and animal powers, of the shrunk and collapsed state of the surface of the body, of the black, thick state of the blood, and of the rapid depression of the animal temperature. D. The states of the perspiration and skin, and the discharge of the serous portion of the blood by the stomach and bowels, imparting the peculiar appearance of the evacuations, proceed from the alteration primarily produced in the vitality of the frame, and in the condition of the blood; and it is chiefly through the medium of the cutaneous surface, of the liver, of the kidneys, and of the mucous membranes, assisted, perhaps, also by the other secreting viscera, that the morbid change of the blood is remedied, and impurities removed from it. E. The advanced stages, or the consecutive, or febrile symptoms of the disease, whether those chiefly depending upon the state of the nervous functions, or of the circulation within the brain, or proceeding from the condition of the abdominal viscera, arise partly from the shock received by, and the depression of, the vital energy of the frame in the early stage, partly, if not chiefly, from the alterations which had taken place in the blood during the early stages of the malady. F. The effluvium or seminium, which propagates the distemper, is generated in the progress of the changes produced in the blood, and is emanated or discharged from the mucous surfaces of the lungs and digestive canal, and from the cutaneous surface, along with their respective exhalations and secretions; and this seminium, by contaminating the surrounding air, or woolen cloths and animal products, capable of attracting and retaining for a while animal effluvium, affects those of the healthy who are predisposed, either constitutionally, or by antecedent, concomitant, or determining influences, or on whom this efficient agent acts in an intense or concentrated form, or is aided by accessory or concurrent causes.—*Medico-Chirurgical Review, Jan.* 1846, *p.* 149.

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53.—USE OF CLYSTERS.—By Dr. HALL, of Glasgow.

[Dr. Hall has long been in the habit of ordering large purgative clysters, to evacuate the whole of the large intestines, as far as the ilio-cœcal valve. In consequence of some eminent practitioners in Glasgow doubting whether

or not clysters could be made to pass through the sigmoid flexure of the colon, Dr. Hall commenced a series of experiments on dead bodies, to decide this important practical question. We may here state, however, that the efficacy of powerful clysters, is, in England at least, more duly appreciated than Dr. Hall supposes, both in cases of obstinate constipation, and in strangulated hernia, as numerous papers in previous volumes of this Retrospect testify. (See Article Hernia, in General Index, Parts 1 to 8). Two cases related by Dr. Hall show how much we may depend on the practice, and to what extent it may be pushed. In the first case, Dr. Hall was sent to operate on a poor man, said to be labouring under strangulated hernia; he was an emaciated old man, sixty years of age—pulse rapid; bowels confined for the last ten days; there had been a stercoraceous vomiting for two days. There was a hard tumour in the right groin, supposed to be the intestine strangulated, but upon examination, Dr. Hall found it to be an enlarged gland; and it had been in existence more than fourteen years. The patient had been for years occasionally troubled with colic, resulting from constipation. Dr. Hall remarks:]

I determined (considering his present symptoms were owing to a similar cause) upon administering, if possible, a large purgative enema of from two to three quarts. In this I succeeded; the man retained it for twenty minutes, at the end of which time the greater part of the fluid was voided, slightly tinged with feculent matter. About three hours afterwards, however, he had another evacuation, which nearly filled a chamber-pot with dark-coloured, most offensive, and nearly solid fæces. The stool was shown to me the following morning, upon my second visit. I expected to have found him in a dying state (for this satisfactory result of the enema had not occurred at the time I left him the previous evening), but, to my surprise, a marked improvement had taken place. The pulse, which before the operation of the clyster was so rapid and feeble as not to be counted, was now below a hundred, and possessed more strength; the vomiting had ceased; and the countenance had lost that peculiarly anxious, cadaverous look which it had when I first saw him. To conclude the history of the case in a few words: the man perfectly recovered, and for two years subsequently was in comparatively good health.

It was this case which ruled my procedure in all subsequent obstinate cases of constipation not depending upon recognised strictures, strangulated herniæ, or abdominal tumours; and I have reason to feel highly gratified with the successful issue of the practice.

[In the second case, the bowels had not been properly opened for ten days; the abdomen was not prominent, but percussion indicated the accumulation of hard fæces, in the cœcum and colon particularly. The gentleman in attendance on the case agreed with Dr. Hall as to the seat of the obstruction, but thought large enemata could not be retained long enough to do good—ordinary sized ones had for the previous two days failed to produce relief. It was agreed, however, to try large injections, and Dr. Hall says:]

I threw up, by Read's enema syringe, five pints of oleaginous gruel, having previously dissolved in it an ounce of sulphate of magnesia, and a table-spoonful of common table salt. The administration of this large quantity of fluid occupied a period of twenty minutes; for it is highly important that the process should be conducted as slowly as possible. The patient, after the first two or three pints had passed, could trace, by his sensations, the progress of the fluid, his description of it accurately corresponding with the course of the colon, even as far as the cœcum: the sense of distention was, at times, almost insupportable. I, however, prevailed upon him to retain the injection for nearly twenty minutes, in order that the contraction of the distended bowel might become more general, and the evacuation more complete. I need not dwell longer upon the case than to state, that dark, *almost black*, scybalous masses, highly offensive, and of the most diversi-

fied shape, sufficient to fill a pint measure, came away, affording marked relief in every respect to my patient, the vomiting and hiccup ceasing, and the pulse falling to the natural standard, followed by sound sleep, and the next morning a strong desire for food, which he retained upon the stomach. On the second day from this, I gave another injection of like quantity and quality—more blackish scybalæ were voided at the commencement of the stool, but towards its close, the discharge was about the consistence and the colour of cow's dung; from that time the patient rapidly improved, and now (October 28) the old gentleman (82 years of age last week) walks out every day for an hour, and enjoys his meals, taking, every night, at bed-time, five to ten grains of pil. rhei co., which effects a daily action upon his bowels.

Upon my return to Glasgow, I related this case to my kind and very able friend, Dr. Lawrie, and it was through his instrumentality that I was enabled the same day to demonstrate (at the Royal Infirmary of this city) upon a dead body (in the presence of Dr. Lawrie and his house-surgeon, Dr. Lancy), that I could with facility inject, with the aid of Read's enema syringe, not only the whole of the large bowels, but that the fluid would even pass the ileo-cœcal valve, for we discovered, upon subsequent examination, that it had traversed a considerable portion of the small intestine.

[In the first experiment on the dead body, Dr. Hall threw into the bowel five or six pints of thin gruel, and on examination it was found to have even passed the ileo-cœcal valve. As far as the operation could go for anything on the dead body, this was decisive. The next experiment was upon the living subject, a man suffering from stricture of the rectum; the pipe was passed through the stricture, and an injection of five pints of gruel thrown up, and on percussion afterward in the region of the colon, a dull sound was elicited; before injecting this it was clear. The third experiment was performed on a stout man. The abdomen was carefully percussed, and the whole of the colon gave a clear sound; the patient was placed on his left side, and three pints of injection thrown up into the bowel, by Read's enema syringe, and now there was dulness on percussion as far as the point where the transverse joins the descending colon. The man was then placed on his right side, and three pints more injected into the bowels. In a few minutes the man went to the water closet twice, and after the second time, percussion indicated the presence of fluid, as far as the sigmoid flexure of the colon. "This case was marked by an important practical point, viz: that the best position of the patient for the operation is lying upon the right side, not upon the left, as in the former cases, and with the pelvis considerably raised." In the fifth experiment, seven pints of oleaginous gruel were injected into the bowels, and from percusssion it was evident that the large bowels were quite filled, and probably some part of the small also. In another experiment on a dead body, in which eight pints of water were used, the fluid passed through all the intestines and even partially filled the stomach. Dr. Graves, of Dublin, and other modern writers, have witnessed the beneficial operation of large injections in fæcal accumulation.]

Dr. Marshall Hall, in his recent publication, called Practical Observations and Suggestions in Medicine, says, if we wish to wash out the colon, we should employ Read's Syringe, and that three pints of warm water will be sufficient—his rule for the administration being, "as slow as possible, and as long as possible." "In this manner," says he, "the intestine is filled before it is distended, its peristaltic action is at length excited by the stimulus of that distention, and it contracts energetically in a mass, which, by its bulk and rapid flow, carries away the feculant matters mechanically." It is but right to observe that I did not see the work of Dr. Marshall Hall, just referred to, until I had nearly completed the experiments which I have detailed to the Society. I was therefore much gratified to find that the mode of administering large injections which I had long practised, was that recommended by this *highly talented and* practical physician.

I differ, however, from Dr. Marshall Hall in one very important point relative to large injections, viz: as to the quality of the fluid used. It will be recollected that I employed well-boiled oatmeal gruel, with a certain admixture of common salt and butter, in the two cases which I have related to the Society; and I am still in the habit of preferring this to any other form of purgative clyster. My reasons for this preference are two-fold; firstly, because the ingredients can be procured in almost every establishment; but, secondly, and more particularly, from the fact that no other injection has, in my hands, answered so well as this. It possesses mucilaginous and lubricating properties which render it especially valuable in all forms of obstructed bowels, combined with a stimulating, solvent, and aperient action (from the common salt it contains), constituting it an excellent substitute for the bile, which, we are aware, cannot in these cases pass into the seat of the obstruction to stimulate by its presence the peristaltic action. We know that the bile possesses this stimulating property, for when the ductus choledochus is tied, constipation always ensues (see Carpenter's Physiology); and we have the assertion of Liebig (Organic Chemistry, p. 154), that "for the production of bile in the animal body, a certain quantity of soda is, in all circumstances, necessary; without the presence of a compound of sodium, no bile can be formed.

[Would not these cases be benefited by the ox-gall? From several cases related in the different journals, and reported in our former volumes, it appears that this substance has in some measure the power of altering the consistence of hard scybalous fæces, and rendering them more soft and pulpy. This is effected even when taken in the form of pills, and we do not see why it should not be equally efficacious when administered in the form of clysters, as exemplified in a case of Dr. Allnatt's in our 56th Article.]

*Monthly Jour. of Med. Science, Jan.* 1846, *p.* 1.

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54.—CONSTIPATION FROM INDOLENCE OF THE BOWELS, AND ITS TREATMENT.—By Dr. Teissier, Lyons.

[In many cases of constipation arising from indolence of the bowels, warm water injections are injurious, because as the muscular fibres are in a state of atony, they are thereby lengthened, softened, and deprived of their contractile power. Dr. Teissier has employed nux vomica, cold lavements, and astringents, with good results. He remarked that by the introduction of tents into the anus, and the use of cold lavements, the constipation was relieved; he was led to believe that this was effected by rousing the contractile power of the large intestine, and that nux vomica would better answer this end. He accordingly gave a pill every morning, containing one-fifth of a grain of the extract: in fourteen days the constipation was relieved. In another case the stomach was implicated, and he was subjected to the ordinary treatment for chronic gastritis. This only increased the constipation; he then had a full diet and nux vomica, one-fifth of a grain daily. He was cured in a month.]

He thinks it is particularly indicated in those cases where there is reason to suspect a general want of tone in the bowels, as in the paralytic, or in old persons, or where we may suspect a want of tone of the muscular coat of the intestine, in consequence of great and long-continued distention, or, in short, when the constipation can be referred to an undue secretion of gas, which, of itself, by causing distention of the bowels, diminishes their contractile power. Injections of cold water, better known than nux vomica, constitute likewise a valuable resource against constipation from want of tone. Of late years they have been much vaunted; but, nevertheless, they are as yet but rarely used in practice. They act somewhat in the same way as the nux vomica in rousing the sensibility and the contractile power *of the intestine.* Our author does not, however, consider that the two

remedies ought to be used indiscriminately under the same circumstances; he thinks the cold injections particularly suitable to individuals of a nervous, highly irritable temperament; to the hypochondriacal, and to females suffering from irritation or engorgement of the womb.

[Astringents as recommended first by Bretonneau, are often very useful; Trousseau and Sidoux, in their treatise on therapeutics, recommend them highly. They are not, however, generally used in practice.]

One can readily imagine the reluctance some medical men have to recommend, in constipation, injections containing the substances they are in the habit of prescribing in diarrhœa—such as catechu, kramiria, alum, &c. But if we reflected that in persons who have long suffered from constipation, particularly females, the rectum forms above the sphincter a pouch, sometimes of considerable size, in consequence of the distention from accumulated fæces, to which the coats of the bowels have been subjected, we should be less surprised that the idea has occurred to have recourse to the injection into the rectum of tonic and astringent substances, with the view of causing corrugation of the muscular fibres of the bowels, which, by corrugating, become shorter, and thus diminish the enlargement of the cul de sac now spoken of.

Astringent injections are particularly suitable in cases where there is reason to suspect an abnormal dilatation of the lower portion of the rectum; for instance, in constipation from the presence of a mechanical obstacle at the anus, caused by hæmorrhoidal tumours, swellings of a venereal or cancerous character, or contraction of the sphincter with or without fissure. These injections are, moreover, suitable, for the same reason, to females in whom constipation exists, along with engorgement or retroversion of the uterus, and to all those persons who, having their bowels relieved only once in eight or ten days, void, after painful efforts, which can be compared to nothing but a sort of parturition, an enormous mass of hardened and dry fæces. In all these cases, it is of consequence to rouse the tonic action of the muscular bands of the large intestine, and this indication is well fulfilled by astringent injections. The ingredients of these injections may be infinitely varied; they may be composed of red roses, krameria, oak bark, bistorta, catechu, alum, &c. The following is Teissier's mode of proceeding: He begins with the simple infusion of roses, cold, and at the end of a few days, he adds to each injection from 15 to 30 grains of the extract of rhatany. He thinks that in obstinate cases a minute portion of the extract of nux vomica—one-seventh or two-sevenths of a grain, for instance—might be added, with advantage, to each enema. He considers, also, that they should measure 10 or 12 ounces, so that they may not be retained many minutes; that their action may be of short duration, and that the muscular fibres of the bowels may be allowed readily to contract themselves. The nux vomica, the cold, and the astringent injections, are not certainly the only means at the disposal of the practitioner in the constipation we are now treating of; but they are those of which our author has had most experience, and from which he has derived most success. We must not forget here the means proposed lately by Fleury—viz. the introduction of tents into the rectum, which, acting as a foreign body, stimulate the bowel by their contact, and rouse its contractile power; nor the shampooing of the rectum, proposed by Recamier; nor, lastly, inspissated ox-gall. To all these means must be added, as auxiliaries, drinks composed of vegetable bitters, a tonic diet, the use of black meats, Bordeaux wine, active exercise in the open air, &c. These are useful auxiliaries, much more beneficial certainly than the use of white meats (veal and chicken), relaxing vegetables, such as sorrel, spinach, chickory, cooling lemonades, juice of prunes, bouillon aux herbs, &c. *Lancet, Dec.* 13, 1845, *p.* 645.

55.—ACCUMULATION OF FÆCULENT MATTER IN THE COLON.—By Dr. SCHOENLEIN.

[The accumulation of hard fæculent matter in the bowels, more particularly of the colon and cœcum, is often very embarrassing to the young practitioner, as it frequently causes symptoms resembling peri-enteritis, and treatment is of no avail in alleviating pain and tenderness, until the scybalous matter is got rid of; but there may be just the opposite symptoms present, viz., those of diarrhœa—hence the necessity for careful examination of the abdomen, and also of the evacuations.]

The accumulation of fæculent matters in some parts of the intestinal canal is apt to be mistaken for schirrous and other tumours of the viscera. I once saw a man, says our author, whose case had been declared by an experienced physician to be one of schirrous swelling in the abdomen—in consequence of a hard immoveable lump that was situated at the side of the umbilicus—but who, fortunately, was speedily relieved of all his inconvenience by the use of warm water enemata and castor oil. He subsequently died of another disease; and, on dissection, it was found that the ascending colon was contracted at one point, and that the gut, nearer the cœcum, was much distended, and quite filled with hardened fæcal matters. In this case the swelling was not much bigger than a man's fist; but in another it was as large as a child's head, and the fæces were as hard as cannon balls. It has been frequently observed, that the fæces are apt to accumulate in the cœcum; and it is well for the medical practitioner to be aware of the fact that, in such cases, there may be no constipation; but that even a diarrhœa may be present. A passage is then formed either through the substance of the hardened fæces, or between them and the walls of the gut; and along this passage the thinner matters may flow on, while the thicker and more consistent are retained. A case, therefore, of seeming diarrhœa may actually be one of inveterate lodgment. I recently observed something of this sort in the case of a young female, who was recovering from peri-enteritis of the small intestines, and inflammation of the mucous membrane of the colon. The stools had been frequently thin, and mucous for several days; but then a large quantity of solid scybalous fæces were evacuated: no sooner did this take place than the diarrhœa entirely subsided. This circumstance is not unfrequently alluded to by the old writers, in their descriptions of dysentery. The bowels, above the seat of the accumulation, are usually much distended with flatus. The circumstances now mentioned must satisfy every reader of the necessity of a physician carefully examining for himself the condition of the alvine evacuations, and of not trusting to the mere report of patients, in cases of obstinate diarrhœa. It will be prudent, too, sometimes to ascertain the state of the rectum by a manual examination.

*Medico-Chirurgical Review, Jan.* 1846, *p.* 181.

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56.—ON OX-GALL IN CONSTIPATION DURING PREGNANCY.—By R. H. ALLNATT, M.D.

[Dr. Allnatt reports the case of a patient of his three months advanced in her first pregnancy. She was habitually constipated, but at this time the stomach became so irritable as to reject all aperients which were given her. Warm water enemata also failed in relieving the bowels. Dr. A. adds]

I then resorted to the inspissated ox-gall, a drachm of which I directed to be dissolved in about a pint of warm water, and used as an enema. The relief was instantaneous; a mass of scybala being expelled which had evidently lain impacted in the colon.

[So long as 15 years ago, Dr. Copland (as may be seen by his works), employed this remedy, and spoke highly of its therapeutical properties.]

*Med. Gaz., Feb.* 6, 1846, *p.* 253.

[At a meeting of the South London Medical Society, in February last, Dr. Aldis alluded to a case of constipation of three weeks' standing, in which every ordinary remedy had been tried without effect: he had that day ordered solution of ox-gall to be injected into the bowels every four hours. Dr. Todd related a case of constipation in a boy fourteen years of age, of sixteen days' duration, in which the seat of obstruction was near the junction of the ileum with the cœcum; when every remedy had failed to give relief he resolved to try the *injection of air*, by which he so filled the large intestines and cœcum that the shape of the latter could be seen through the abdomen. The next morning the patient had three or four copious evacuations. This plan of treatment, Dr. Chevers observed, was recommended by an American writer, and had often been employed with success in the intus-susception of children.

*Med. Gaz., Feb.* 27, 1846, *p.* 392.

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57.—ON THE USE OF OXIDE OF SILVER.—By Butler Lane, M.R.C.S.

[Mr. Lane is convinced that the essential therapeutic action of silver is directly sedative, and that its appliance is indicated when a state of excitement or irritation to a certain extent exists. Dr. Golding Bird terms the oxide an "*organic sedative*." Mr. Lane says]

I shall first speak of the external appliance of the oxide of silver in the form of an ointment or powder. In cases of irritable ulcer its action is highly beneficial, and it is decidedly much preferable to the nitrate, where the stimulant caustic action of the latter is not required. In many cases we know that the primary destructive causticity is prejudicial, giving a stimulant to the morbid absorbent tendency. In the external forms of ophthalmia an ointment of oxide of silver of the strength of a drachm to the ounce, will often exert an influence extraordinary in its rapidity. There can be no doubt that such a preparation is well nigh analogous to Mr. Guthrie's "*black ointment*," which he is in the habit of using with so much success for the purulent ophthalmia of children. The same ointment is made with the nitrate of silver, but it necessarily becomes rapidly converted into an oxide by the mode of preparation.

[He has likewise found it exceedingly useful when applied to *sore nipples*. Speaking of the internal administration of the oxide of silver, first, in restraining *undue secretion*, whether of sanguineous character or otherwise, he says]

I have known it arrest epistaxis: in one case, where the hæmorrhage was almost of daily recurrence in a young chlorotic female, I have seen it exert some influence over hæmoptysis, though I cannot speak very positively in its favour. In the profuse purulent expectoration and colliquative perspirations of phthisis I have found the employment of the remedy attended with considerable temporary advantage. Of its efficiency in restraining hæmatemesis I have met with several instances, and in other gastric discharges I have had abundant evidence of its efficacy. In very many cases of hæmorrhage from the bowels, dysenteric or otherwise, the administration of the remedy has proved highly serviceable. In one instance, a man, æt. 40, suffered much from time to time with copious discharges of blood and purulent matter per anum, apparently connected with disease of the descending colon. The oxide of silver in half-grain doses twice or thrice a day acted most beneficially on two occasions within the last twelve months in restraining the hæmorrhagic discharge, and in abating the purulent secretion: it also had much effect in allaying the general irritable condition of the stomach and bowels, and an irregular state of the heart's action, which I understood had been previously attributed to organic lesion, though evidently a mere sympathetic affection. In mucous and bilious diarrhœa, when become idiopathic and not merely symptomatic of undi-

gested aliment or hepatic congestion, the oxide of silver is an unfailing remedy: it is, however, desirable to combine it with a small proportion of opium where spasmodic pain exists. In a case of obstinate chronic diarrhœa of many years' standing which came under my care, the oxide appeared to be the only remedy which possessed any restraining power: it would always abate the intestinal secretion, but as the affection was connected with long standing disease of the liver, accompanied by chronic jaundice and dropsical tendency, much caution was required in the use of the remedy. I have on several occasions found much advantage in the employment of the oxide of silver in the form of diarrhœa consequent on typhus fever, and doubtless connected with an ulcerated state of the intestinal mucous membrane: we know that this diarrhœa, which is often dysenteric in its character, constitutes not unfrequently the most urgent symptom towards the later period of the disease, and one for the abatement of which neither opiates nor astringents will act kindly. It is, however, in uterine discharges that the effect of the oxide of silver is most remarkable; it exercises an almost invariable control, apparently indicating a specific uterine influence. I have, in my former papers, related several cases illustrative of this fact, and have of late years had much further experience as to the influence of the medicine in different forms of menorrhagia, &c., and consider that when used with due precaution it is well nigh infallible. Where the hæmorrhage is of secretive character, occasioned by local excitement, it is that the oxide of silver will produce the most decided effect. When, on the other hand, the cause is chiefly mechanical, from the rupture of blood-vessels, the same advantage will not attend its employment. Speaking generally also, I believe that where an hæmorrhagic tendency is connected with an imperfect stasis and abnormal tenuity of the blood, the beneficial influence of opium, lead, and tannin, will be found far superior to that of the oxide of silver. (See conclusion of Mr. Lane's Paper, in Article 60.)

*Med. Gaz. April* 19, 1846, *p.* 640.

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58.—USE OF CASTOR OIL IN MUCOUS MEMBRANE CASES.—By Dr. Thomson, Burton-on-Trent.

[Dr. Thomson believes there are but few cases of diarrhœa occurring in infants under a year old but what may be cured by castor oil, even when ulceration has taken place: as shown by a predominance of blood in the evacuations—tenesmus, abdomen tumid and painful, mouth dry and aphthous, &c., &c. He gives the castor oil with yolk of egg, and according to circumstances does or does not add a gentle opiate. He recommends, however, as accessory, the warm bath, liniments to the abdomen, and occasionally a mild mercurial dose. He observes]

No mercurial so quickly changes the character of the evacuation as the emulsion, which only requires to be steadily persevered in. The following is the form in which I generally prescribe it for infants:—For an infant of from two to four months old: ℞. Ol. ricini, ʒi—ʒiss, Vitelli ovi semis., Aq. aneth. feneculi, aa. ℥i. Ft. emuls. Sumat. coch. parv. bis die. To the above, from two to six drops of laudanum may be added, or not; but, of course, this as well as the size and frequency of the dose, must vary with the case. The mixture is generally taken readily, and even liked. The same preparation is equally useful in that form of intestinal affection which is met with in children of from one to nine years of age, identical with the infantile type cited above, but presenting slightly varied symptoms, such as the tendency of the evacuations to become watery, brown, black, and very offensive; the picking of the lips, nose, &c. In a case of this nature which lately came under my care, the patient, a boy aged three years, lay almost insensible and somnolent. The evacuations, resembling black dirty water, and very offensive, were passed eight or ten times in the twelve hours.

Other symptoms of subacute inflammation of the mucous membrane were also present. After the first dose of simple emulsion, there was no motion for thirty-six hours, all the other symptoms becoming ameliorated. The medicinal action of the oil is certainly much modified by its union with the yolk of egg, for the same dose which would act well as an aperient alone, when thus combined, will scarcely act at all.

*Monthly Jour. of Med. Science, Feb.*, 1846, *p.* 88.

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59.—ON SOME OF THE DISEASES OF THE LIVER.—By GEORGE BUDD, Esq., M.D., F.R.S., &c.

[Perhaps no diseases are involved in more mystery, as to diagnosis and prognosis, than those of the liver, if we except the affections of the nervous system. After giving a sketch of the anatomy of the liver, and examining minutely the composition and properties of the bile, Dr. Budd enters upon the]

*Sources and uses of the bile.* The views entertained of the sources and uses of the bile have, of late years, undergone very important alterations. At one time, this fluid was regarded as almost wholly excrementitious; another supposed principal use was to promote the peristaltic action of the intestines. The present belief is, that the bile, far from being to a great extent excrementitious, is almost entirely re-crementitious; and though it seems probable that the evacuatory movement of the intestines is in part owing to this "natural purgative," as Dr. Budd terms it, yet doubtless that effect is less due to any isolated action of the bile, than to the normal stimulus of the fæcal mass as a whole. The bile, in common with the excretions of the lungs and kidney, is probably, to a great extent, derived from the decomposition of the tissues of the body, but part of it also is, no doubt, educed from non-nitrogenized articles of food. Carbon is the substance chiefly eliminated by the liver, in like manner as it, along with hydrogen, is the chief constituent of the pulmonary excretion. But an important distinction obtains between the two cases. While the carbon of the lungs is united to oxygen, and excreted in a non-combustible state, the carbon of the liver is non-oxygenized, is still combustible, and is intended, not for excretion, but absorption. But the fact that the two organs secrete carbon, gives them a complementary relation, of which we avail ourselves in therapeutics.

First, then, the liver is, in part, an excrementory organ. The resin and the colouring matter are excrementitious matters. Secondly, the liver is a depuratory organ. The abdominal circulation returns through it, and, as Dr. Budd justly observes, "the blood which has come from the stomach and intestines must necessarily be charged with many impurities besides those derived from the mere decay of the tissues. Along the extensive mucous tract with which every thing we eat and drink is brought in contact, absorption is constantly going on, and various matters must therefore enter the portal vessels, not fit by their nature to form blood, or to serve any other purpose in the body. Many of these substances are removed from the blood in its passage through the liver." The part which the bile plays in digestion is more obscure and uncertain. Dr. Budd agrees with those who think that the share which the liver has in assimilation, has been overrated. According to the most recent and approved views of physiologists and chemists, the solution of our food is all that is required, and not, as was formerly supposed, a mysterious production from it of albumen, fibrin, and casein, which it did not previously contain.

[At the conclusion of his introductory chapter, Dr. Budd makes some pathological and therapeutical observations, and among cholagogue medicines he especially mentions mercury, iodine, muriate of ammonia, and taraxacum. Dr. Forbes, however, has never observed peculiar cholagogue

properties in muriate of ammonia, nor yet in rhubarb, which Dr. Budd subsequently instances, and is surprised that colchicum and colocynth should have been omitted, particularly the former, since in this respect it stands, perhaps, next to mercury. Nitric acid, also omitted by Dr. B., in some cases notably promotes the action of the liver. The first morbid condition of this viscus treated of is]

*Congestion.* The common and usual form of congestion of the liver is, that of the hepatic vein and its capillaries; and that form may be caused by any disease in the heart or lungs tending to obstruct the return of blood by the hepatic veins. If, while the hepatic veins and their capillaries are thus congested, the portal vein and the capillaries immediately branching from it are empty, the appearance called mottled liver is presented, caused by the central vessels of the lobules being full of blood, while those on their margins are void of it. And just in proportion as the vessels continue to be distended in a direction distal from the heart, and as the portal capillaries which form the margin of the lobules become filled gradually, will the mottled appearance merge into a homogeneous redness. And now, in addition to sanguineous, will biliary congestion begin to take place; and this plainly in consequence, in the majority of cases at least, of the pressure of the distended blood-vessels on the minute branches of the biliary ducts, whereby the discharge of bile along these ducts is impeded. The general result of this state of things is hyperemia; and a state of distension of the biliary vessels analogous to hyperemia, but for which we have no exact name. The liver, of course, becomes enlarged, and its colour, when an incision is made, is a deep reddish-brown or black. The diagnostic indications of this state are, the dropping of the liver several inches (more or less, according to the degree of enlargement), below the ribs, and a fulness felt by the patient and perceived by the physician in the right hypochondrium. There is not "in general" pain; never, we should say, in this simple form of congestion, until its prolongation begins to give rise to inflammatory action. And even then, pain is hardly or not at all experienced, until the peritoneal investments begin to suffer, and the affection becomes what Bonnet calls hepato-peritoneal. See Art. 5, of British and Foreign Medical Review for July, 1843.

[In congestion depending upon obstructed circulation through the heart, he advises bleeding, purgatives, diuretics, rest, and those measures, in short, which peculiarly relieve cardiac disease. The reviewer here remarks, that purpura hæmorrhagica, scorbutic disease, and any affections tending to diminish the fibrine of the blood, require the mineral acids and the bitter extracts. He says, he has witnessed great advantage from the compound infusion and spirit of horse raddish, taken twice or thrice a-day, with ten drops of nitric or chloric acid added to each dose. Dr. Budd divides inflammatory affections of the liver into *suppurative*, *gangrenous*, and *adhesive*, and his object is to show, that by far the majority of cases of abscess of this viscus are owing to suppurative inflammation of some vein, and consequent contamination of the blood by pus. In approaching the questio vexata of the value of mercury in hepatic affections, he observes, that]

In this country, mercury has generally been resorted to, when the local symptoms have led to the suspicion that the liver was diseased, but I fear, with no benefit to the patients. It has been well observed by Abercrombie, "In the liver diseases of this country, mercury is often used in an indiscriminate manner, and with very undefined notions as to certain specific influence, which it is supposed to exert over all the morbid conditions of this organ. If the liver be supposed to be in a state of torpor, mercury is given to excite it; if in a state of acute inflammation, mercury is given to moderate the inflammation, and reduce its action."

[The reviewer on this subject says, that although he greatly respects the authority of the late Dr. Abercrombie, and that of Dr. Budd, yet he consid-

ers the use of mercury defensible both in many states of torpor, and in many also of acute inflammation of the liver. When the liver is tumid and tender, with equivocal marks of diminished secretion, such as pale or white stools, no agent more rapidly reduces the volume, and restores the action of the organ, than mercury; and he would be a bold man who would refrain from giving it, of course, with other means, in almost any acute inflammation of the liver, except that caused by occlusion of the common duct. When abscess has formed in the liver, Dr. Budd would never recommend it to be opened unless assured by circumscribed œdema, or a slight blush on the skin, that union had taken place between the integument and abscess. On the treatment required where there is an excessive secretion of bile, Dr. Budd appends some proper and useful hygienic suggestions.]

These measures (says he) are generally sufficient for the time, but they do not strike at the root of the evil. Exemption from future attacks, and from the manifold and greater evils to which these disorders may lead as age advances, can only be procured by a change of habits. One of our objects in directing this should be to increase the amount of oxygen inspired, and thus to consume in respiration, or burn off materials that would otherwise be left for the liver to excrete. The means most efficacious for this purpose are sea-voyages, riding, or other exercise in the open air, well-ventilated rooms, early rising, the cold or shower-bath, &c. Too much indulgence in sleep, which so much reduces the activity of both respiration and circulation, must be especially injurious, more particularly in rooms that are ill-ventilated, as most bed-rooms are. Another object of equal or still greater importance, should be to limit in the food the supply of those materials—such as spirituous liquors, butter, cream, fat, sugar—which contribute to form bile, or which increase the quantity of bile indirectly, by serving as fuel for respiration. Some of these aliments, as cream and porter, for instance, seem to be not only pernicious in this way, but also by directly embarrassing the secreting function of the liver. From these considerations it follows, that it must be especially injurious for persons who suffer from the disorders we are considering, to indulge in sleep immediately after a full meal. To lessen by sleep the activity of respiration at the very time when the materials consumed in this process are being poured in large quantity into the blood, must lead in a twofold way to accumulation of bile in the system, and favour the occurrence of a bilious attack. In this way may be explained the ill-effects of suppers in disorders of this class, and the well-known fact, that a single indulgence of this kind may bring on a bilious attack, in a person predisposed to it.

*British and Foreign Med. Review, Jan.*, 1846, *p.* 39.

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60.—ON OXIDE OF SILVER, (Conclusion of Mr. Lane's Paper.)—See Article 57.

I shall now refer to the special action of the oxide of silver in gastric affections; and, in the wide class coming under the designation of dyspepsia, we shall often find it a simple and efficacious medicament. One of the commonest forms of dyspepsia is constituted by a state of chronic congestion of the gastric mucous membrane, indicated by tenderness and uneasiness in the epigastrium, frequent nausea, loss of appetite, and a want of digestive power, inconvenience being experienced after eating, especially if the strict rules of diet have been deviated from. The tongue may be clean or somewhat furred, and the papillæ are generally preternaturally red and turgid. There is usually some degree of thirst, and the bowels are somewhat costive. In these cases the oxide is an effectual remedy in conjunction with aperients and alteratives as far as may be required. These are doubtless the cases respecting which Dr. Golding Bird remarks, that "in those forms of irritable stomach, especially where an erythemic state of mucous membrane existed, the oxide of silver has been of great service."

Gastralgia, in its pathological nature, is but a violent form of the irritative dyspepsia in question, the morbid state of mucous membrane being connected with a very sensitive and irritable condition of the sentient nerves of the viscus, which may be evinced under various circumstances, and even in the opposed conditions of repletion and vacuity. In these cases the oxide of silver will often be found highly efficacious. I remember one case of cure, where the pain would recur once or twice a day, with such intensity as to compel the person to lie down immediately wherever he might be, continuing sometimes for one or two hours; other remedies had previously failed in affording relief. When much tendency to vomit has existed, I have not found the use of the oxide of silver beneficial. Neither have I found it useful in pure atonic dyspepsia, where the tongue was pale, flabby, and indented—in which the experience of Dr. Golding Bird coincides; and this accords with my opinion as to the action of the remedy being truly sedative.

In cases of simple pyrosis much advantage is obtainable from the employment of the oxide of silver. The free action of the bowels has to be maintained, and the secretion of the liver regulated. Dr. Golding Bird says, with respect to the pyrosis, "it requires a few days' preliminary treatment to reduce the gastritic condition, and then the oxide of silver acts well." Whether pyrosis assume a marked acid or alkaline character, I have generally found it amenable to the influence of the medicine. The combination of mild alkaline aperients with half-grain doses of the oxide twice a-day, in the form of a pill, will, in the majority of cases, readily counteract the acid form of disease. In the neutral and alkaline varieties of pyrosis, tonics are in most instances desirable adjuncts to the oxide of silver; but where there is deep-seated pain, the preliminary application of leeches, and the use of counter-irritation, are requisite. I am, however, inclined to believe, that many of these cases do not originate in the stomach, as generally supposed, but in the pancreas. I have had but little experience in cases of ropy or glairy discharge from the stomach. In one case, however, which came under treatment, the oxide certainly exerted some beneficial influence. Alterative doses of henbane, ipecacuanha, and blue pill, with mild salines, were resorted to in the first instance, and the cure was completed under the administration of the silver simultaneously with vegetable tonics.

It is, however, to the peculiar medicinal influence of the oxide of silver on the uterine system that I am most particularly desirous of directing attention; and I believe, in this respect, that I may fairly claim the merit of introducing a new and valuable remedy for many female complaints, and one which had long been a desideratum. The oxide of silver demonstrates a specific power in controlling certain states of uterine excitement; and whether such excitement be evinced merely locally by undue sensibility or secretion, or sympathetically by pain or constitutional irritation, the sedative influence of the remedy is unfailing. Of course, any primary constitutional derangement, whether plethoric or anæmic, has to be counteracted by appropriate treatment; and in some congestive states of the uterus, as of other organs, a mere sedative action not being the chief indication, the oxide of silver may not be available. I need adduce no instances of the efficacy of the oxide of silver in the common forms of menorrhagia. Suffice it to say, that with the precautions above alluded to, I am almost invariably able to resort to the employment of the remedy with confidence and satisfaction. *Med. Gaz., May* 1, 1846, *p.* 763.

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## URINARY ORGANS.

### 61.—GRANULAR DISEASE OF THE KIDNEY, AND ITS RELATIONS.

Bright's disease, Dr. Johnson considers, may be described as primarily *and essentially* an exaggeration of the fat which exists naturally in small

quantities in the epithelium cells of the healthy gland—a fatty degeneration of the kidney analagous to the fatty degeneration of the liver, as demonstrated by Mr. Bowman. This accumulation of fat in the secretory cells necessarily leads to the engorgement and dilatation of the tubules which they line, and one or more convoluted tubes thus gorged with fat, and projecting either on the surface of the gland, or on the surface of a section, constitutes one of the so-called "granulations of Bright." Some malpighian bodies were observed to contain no fat, whilst others contained gorged fatty cells; but Dr. Johnson has never observed in these bodies an accumulation sufficient to produce destructive pressure on the Malpighian tuft of capillaries. The frequent connection of albuminous and bloody urine with Bright's disease, and the atrophy of the kidney, are attributed by Dr. Johnson to the mechanical operation of the above-described fatty accumulation. Having alluded to the circulation of the gland as described by Mr. Bowman, he entered into a minute detail of the reasons which led him to the conclusion that the presence of albumen and blood in the urine is, in this disease, a secondary phenomenon, dependent on the previous morbid changes.

In reference to the atrophy which the kidney so often undergoes in this disease, the author contrasted the well-known peculiarities of the vascular organization of this gland with the very dissimilar arrangement of the vessels and secretory cells of the liver, an organ which appears to suffer but little from a similar engorgement in its cells. In speaking of the stages of this disease, the author observed that he had no reason for believing in the existence of any congestive stage as necessarily preceding the morbid accumulation which he describes. The various forms about which so much has been said and written, he believes to depend in great part, if not entirely, on the rapidity with which the disease advances. In cases of long duration, the kidney is generally found small, contracted, and granular. When the progress of the case has been rapid, the gland is large, smooth, and mottled.

The author then dwelt at some length on the frequent coincidence which he had observed of the disease in question with a similar fatty degeneration of the liver, arteries, and valves of the heart. From the above data, the author deduced the important practical conclusion, that these fatty degenerations so often conjoined are of constitutional origin, and that they must not be considered and treated as local disorders. He repudiated the notion of Bright's disease having any specific connexion with scarlatina; neither did he believe in its alledged relation to acute inflammatory dropsy.

The causes of the disease are, according to the author, essentially debilitating: in large towns the disease is prevalent and fatal, in country districts it is comparatively rare. The disease has been artificially produced by Mr. Simon, of King's College, in the lower animals by their continued exposure to depressing influences. With respect to the microscopical character of the urine in this disease, the author remarks:—1st, That the cylindrical bodies described by Dr. F. Simon, are fibrinous casts of the tubes, frequently entangling bloody-discs, oil-globules, or epithelial cells with fatty contents. 2nd, That the presence of much fat in the urine is an alarming symptom. In an advanced stage of the disease, fat rarely abounds; but from experiments on the lower animals, as well as from observation on the human subject, it seems probable that in many cases of chronic ill-health during a period in which no especial attention is directed to the state of the urine, there may be eliminated with this secretion such an excess of fatty matter as would in reality mark the first stage of Bright's disease.

On the subject of treatment the author stated, that the obvious indications were—1. The pursuance of a general tonic regimen in respect of diet, atmosphere, exercise, and medicine. 2. The careful avoidance of all exhausting remedies. 3. To avoid, as articles of food, fat and other highly carbonized materials. And 4. To relieve congestion of the gland by strict attention to the functions of the skin and bowels, and by such small bloodlettings as circumstances might demand.

[This was the subject matter of a paper read before the Royal Medical and Chirurgical Society, in November last, by Dr. George Johnson. In a discussion which followed, Dr. Bright observed that the conclusions of the author "bore the appearance of the greatest probability, they appeared like truth." Dr. Copland said, it was no new doctrine to suppose that the disease originated in a mal-assimilation of the food by the digestive organs resulting from a morbid state of the blood; since he had himself published it three years ago. Dr. Budd said]

He had placed three or four patients in King's College Hospital labouring under dropsy and albuminous urine, on a diet consisting of lean meat, bread and water, and abstaining from sugar, fat and starch. He had also administered iodide of potassium and liquor potassæ. The result of the treatment, as far as it had gone, had been quite satisfactory; but of course at present it would be premature to draw any conclusion from it.

[Dr. Johnson, the author of the paper, observed that one important practical point resulted from his observations, which had never before been insisted on, viz., the necessity of abstaining from fat as an article of diet. Mr. Simon differed from Dr. Copland in his opinion of the treatment recommended in the paper "that it was the same as had always before been pursued," since Dr. Copland had in his dictionary recommended hydragogue cathartics, which are forbidden by Dr. Johnson. Dr. Williams said]

He knew no treatment so beneficial and successful as cautious bloodlettings in the early stages, particularly in the acute form of the disease. He had recorded twenty or thirty cases of albuminuria, altogether independent of scarlet fever, and coming on as an acute disease, in which, in the early stages, he had employed cupping on the loins, hydragogue cathartics, conjoined with medicines calculated to improve the general health, with the greatest success. He had found no improvement in the condition of the urine, until these means had been applied. The enlarged and congested state of the kidney, together with tenderness over the organ, demanded this plan of treatment: depletion on the contrary, was contra-indicated in chronic cases. He agreed with Mr. Toynbee as to the importance of attention, in the first instance, to the condition of the parenchyma of the organ, as he (Dr. Williams) considered that the deposit of fat was a secondary effect, and not the fons et origo of the disease. There were certain conditions of the kidneys, somewhat resembling Bright's disease, in which there was diminution of the urine with albumen, but the water of the urine was diminished in quantity as well as the natural constitutents of the secretion; but here, instead of having a mottled kidney, you had simply an enlargement and induration; the organ did not abound in fatty, but in granular matter; and the cells constituting the parenchyma were increased in the number, and contained granules. *Med. Gaz., Nov.* 21, 1845, *p.* 1300.

[In a clinical lecture by Dr. Todd, in a subsequent number of the Medical Gazette, on the subject of "dropsy with albuminous urine," the views of Dr. Johnson are supported. In this lecture we find the following remarks on,]

1st.—*The secreting apparatus of the kidney.*—This consists of highly convoluted tubes, each one at its origin, that is, at its connection with the vascular system, presenting a cyst-like dilatation, which surrounds a peculiar portion of the vascular apparatus, called the Malpighian plexus. The mass of the kidney is composed of such tubes. Their structure is basement membrane, lined with cells of epithelium. Dr. Johnson has ascertained, that in many of these cells a small quantity of fat exists. It must be remembered that the condition of this epithelium affords a most important indication of the state of nutrition of the gland. If its nutrition be perfect, then its secreting functions will be well performed, and the epithelium will be healthy; but if, on the other hand, its nutrition be impaired, one of the results will be unhealthy secretion of epithelium.

2ndly.—*The vascular apparatus.* The renal artery breaks up in the substance of the kidneys, dividing and subdividing, till at last several small arteries are formed (the Malpighian), each of which passes toward an uriniferous tube, pierces its wall, and terminates in a minute tuft (the Malpighian plexus or tuft), within the dilated origin of the tube. Out of the tuft a small vein arises, which makes its exit by piercing the wall of the dilated extremity of the tube; the vein breaks up into a venous plexus, called the "portal," from the obvious analogy which it bears to the portal system of the liver. From the portal plexus larger and less numerous veins arise, which, by their junction form the renal or emulgent vein.

The course of the circulation in the kidney, then, may be described as follows:—Before the blood can get to the renal vein it must pass through the Malpighian and portal plexuses; the former within the dilated origin of the uriniferous tube, the latter external to and surrounding the walls of the tubes; and this difference is very important. If an accumulation were to take place within the tubes, what would be the result? The portal plexus would be pressed, and the circulation in it retarded; the blood would consequently be thrown back on the Malpighian tuft, and congestion there would result. It is worthy of notice, that the vessels which compose the Malpighian plexus are very delicate in their texture, and peculiarly favorable to admit of the filtration of fluid; and if the congestion goes so far as to cause rupture, the red particles and fibrine escape into the tubes. Whenever you meet with serum of blood in the urine, you may at once conclude that there is congestion of the kidney—in one Malpighian plexus, at least; and whenever red globules are present you may be sure that rupture has taken place. The tubes have in such cases been found injected with blood.

[With reference to the subject of Dr. Johnson's investigations, also, we find some excellent and elucidatory remarks, which particularly corroborate the views of that gentleman, and will be a good addendum to the discussion of this subject, which took place amongst the members of the Medico Chirurgical Society. Dr. Todd asks, What is the condition of the kidneys generally, in these cases of albuminuria? and then proceeds to say:]

1. Both kidneys are found in a diseased state. It seldom or never happens that the disease is limited to one kidney. 2. We meet with irregular vascular congestion; the vessels are full at some parts of the organ, and empty at others, and this gives rise to a mottled appearance on the surface of the kidney. 3. A deposit of a new matter is found either in or between the tubes of the kidney; this deposit has hitherto been called granular. 4. As the disease advances, the kidneys, which at first were enlarged, shrink, their cortical or external portion becoming wasted here and there, leaving depressions on the surface of the organ corresponding to the wasted portions; and thus a tuberculated aspect is given to the kidney. The blood-vessels are obliterated in many situations, and it is impossible to inject such kidneys.

Such, then, is the coarse anatomy of this disease, as has been clearly made out by the numerous observers who have directed their attention to it. The following questions, however, naturally suggest themselves, and must be definitively answered before we shall be in a condition to determine the pathology of the disease:—What is the nature of the deposit? How is it produced? Where deposited; in or between the tubes? Is it a product of inflammation? Is it a new element, or only an increase of a natural one? Dr. Johnson has found that the healthy epithelium of the kidney contains fat—in small quantities, it is true, but yet sufficient, and so generally existing as to warrant the assertion that its presence in the cells, in small quantity, may be regarded as a normal character of them. It had been previously known that this is the case with the cells of the liver; but in these, fat exists in much larger quantity than in the renal epithelium. In this disease, however, according to Dr. Johnson's most important discovery, fat accumulates in the epithelial cells of the kidney in large quantity;

and it is the existence of these gorged cells which gives the appearance of a granular deposit.

Mr. Bowman had discovered that fatty liver essentially consisted in an overloading of the epithelial cells with fat. So similar are the cells of the kidney, in this disease, to those of the fatty liver, that if placed side by side you could not distinguish a renal from an hepatic cell. Both are filled with distinct oil globules, the appearance of which is so peculiar that no microscopic observer of ordinary experience could fail to distinguish them. In these cases the cells of the liver are often found unduly gorged with oil, exactly as in the kidney. Fatty matter, along with other materials, is also found in the arteries, and on the valves of the heart. Phthisis, too, is frequently co-existent, and tubercles, it may be observed, contain fat as well as other elements.

With regard to the question, "Is the deposit situate in or between the tubes?" I must remark that it is very unlikely it should select the latter situation. The tubes are placed very close together; between them there is a very small quantity of a clear homogeneous hyaline substance, in which the vessels are lodged. Again, the changes of nutrition are known to take place on the free surface of the tubes—that is, in their interior, and therefore it is most likely that any changes resulting from impaired nutrition would also manifest themselves there. You may see the fat-laden epithelium, within the basement membrane of the tubes. Some years ago, I had formed the opinion that the epithelium, in this disease, was secreted in undue quantity, and distended the tubes, but I did not know that its substance was in any way changed. When the gorged epithelium cells accumulate in the uriniferous tubes, the result is, that the tubes become dilated, the portal plexus which surrounds them is compressed, the passage of the blood through it is impeded or prevented, and the Malpighian tufts become distended with blood, and allow serum to transude through the walls of their vessels, or, if they burst, admit of the escape of the red particles and fibrine. As the accumulation goes on, the portal plexus here and there is obliterated, and the Malpighian tufts become obliterated likewise, and atrophy of the kidney, and deficiency of its secretion ensue. As, however, many healthy Malpighian tufts remain, and secretion does not always stop, but, on the contrary, may now and then become abundant, or even excessive.

It may be now confidently asserted that this disease consists essentially in a deposit of fat in undue quantity in the epithelial cells of the kidney, associated with similar deposits, in greater or less quantity, in other organs—in the liver, on the internal surface of arteries, and of the valves of the heart; and that it is frequently accompanied by the deposit of tubercles in the lungs. Instead, then, of the name of granular kidney, hitherto so generally employed, we must use that of "fatty kidney," as we speak of fatty liver. And I may remark here, that this disease is, to all intents and purposes, of the same nature as the fatty liver, which has hitherto been chiefly known as a frequent accompaniment of phthisis.

It is true that the accumulation of fat in the cells of the liver does not lead to the obliteration of the blood-vessels of the gland, nor to a stoppage of its secretion, as in fatty kidney. This difference in the effects of the same accumulation in these two organs is due to the greater distensibility of the liver, which readily increases its size without compressing or impeding its blood-vessels; whereas, from the dense fibrous membrane which covers the kidney, and the highly convoluted arrangement of its secreting tubes, the retention of the enlarged cells within them speedily affects the vessels which play around them, and obstructs the circulation. The frequent association of fatty liver with fatty kidney strongly indicates that the two diseases are closely allied to each other, and owe their existence to a similar or even to the same cause. There is no evidence that this disease *is inflamm*atory. Fat is certainly not a product of inflammation, nor do we

find any inflammatory products in the kidneys in this disease. No pus, no gangrene, no lymph, in the substance of the kidney. To explain the disease, we must look to those circumstances which favour the formation of fat: deficiency of oxygen, want of exercise, impure air, and the like.

Mr. Simon and Dr. Johnson have artificially produced the disease. They kept cats for some time in the dark, causing them to breathe impure air, and to live on unwholesome food. The results were, that they were enabled to trace the disease through its three stages. They drew off the urine from the bladder by a catheter, and examined it from time to time: they found that the first fat began to appear in the urine, with numerous gorged cells. There was soon a tendency to dropsy, and the urine became smoky and albuminous. The dropsy increased, the urine became scanty, and death from suppression followed. The state of the kidneys were exactly such as I have described it in the human system.

I confess that this appears to me to be an experimentum crusis. A theory of the disease had been formed, based on facts ascertained in the human subject. An animal is subjected to all those conditions which would favour the expected results, and these results have followed exactly as had been anticipated. In the treatment of the disease, we must look to the particular stage in which we find it. If perchance the patient applies for advice in the very earliest stage, and the physician is fortunate enough to detect it, the disease may be cured. If, before mechanical obstruction and its consequences have arisen, the mode of life and habit of the patient be changed by pure air and careful attention to diet and exercise, then it is quite possible that the coming evil may be averted. Unfortunately, however, a patient seldom applies for medical aid thus early. In the second and third stages we can only palliate suffering, by relieving congestion, promoting the flow of urine, and the action of the skin; and perhaps we may check the tendency to the abnormal deposit of fatty matters, by restricting him to a diet which contains neither fat nor butter, nor any of those non-azotised substances which are nearly allied in chemical constitution to fat, and are easily convertible into it—such as starch, sugar, potatoes, &c. We must not allow fat, butter, and such things, to be taken, nor any of those substances which, like potatoes, starch, &c., are easily convertible into fat. The foregoing considerations, therefore, lead me to regard "Bright's Disease"—1st. As one in which the existence of albumen in the urine is a concomitant, by no means an essential feature of the disease, but a result of the mechanical obstruction to the circulation, which the morbid deposit in the kidney causes. It is, as indeed Dr. Bright himself has always insisted on, only one of those diseases which give rise to albuminous urine. 2dly. As a disease of the blood, manifesting itself in faulty assimilation, both primary and secondary, and consequently allied to those diseases (gout, rheumatism, diabetes, &c.) which have their origin in a morbid state of the blood. It will be for future clinical research to discover such signs of the earliest stage of the disease as will enable both physicians and patients to detect it in sufficient time to adopt the remedial measures which are so clearly indicated by its pathology.

In conclusion, in order to save myself from being misunderstood, let me say, that although I object to the term albuminuria, yet I regard the presence of albumen in the urine as a symptom of grave import. If albumen should suddenly make its appearance in the urine, and quickly disappear, little need be feared; but if, on the other hand, it continues steadily and unremittingly to show itself, then it must be looked upon as a symptom calculated to excite our worst fears. The presence of albumen is always indicative of partial or general congestion of the kidney. This congestion must have a cause, and that cause may be either—1. Undue attraction of blood to the organ, as from irritation, or, 2. Obstruction to the circulation in the portal plexus of the kidney, causing congestion of one or more Malpighian tufts; and this latter cause may depend either on obstruction to the general ven-

ous circulation, from disease of the heart primarily, or upon mechanical pressure of the portal plexus, by the over-distended uriniferous tables.

*Med. Gaz., Dec.* 19, 1845, *p.* 1444.

[Dr. Robinson, of Newcastle-on-Tyne, who has devoted much time to the consideration of this subject, (see Retrospect, Vol. XI., p. 68,) although he does not doubt, at all, the accuracy of the microscopical observations of Dr. Johnson, supported as they are by the concurrent testimony of so many eminent men, yet differs from him with respect to the proximate cause of the malady, and affirms that it depends upon a disorder in the circulation of the affected organ. With respect to the production of albumen, Dr. Johnson's views are identical with his own, and may be briefly expressed in Dr. Robinson's own words, as follows:]

The presence of albumen in the urine is produced by, and its proportional quantity is in a direct ratio to the degree of, congestion of the capillaries of the kidney, from whatsoever cause that congestion may arise.

[Dr. Robinson concludes that the only condition required for the production of this symptom is an undue compression of the blood contained in the smaller vessels. He observes:]

Much of the confusion now surrounding this subject seems to me to have arisen from the following circumstance: that since the publication of his discovery by Dr. Bright, too much importance has been attached to albuminuria as a symptom invariably diagnostic of certain peculiar structural changes in the kidney; whereas, taken *per se*, this condition of the urine indicates nothing more than the existence at the time, of some irregularity in, or obstruction to, the circulation through that gland. Hence before pathologists can arrange or discuss in a satisfactory manner the numerous and important questions connected with this disease, they must distinguish more closely and carefully than has yet been done between ordinary acute and chronic nephritis, and those peculiar forms of the latter disease in which the organ presents the morbid appearances so ably described by Dr. Bright, and so justly associated with his name. It is, I presume, to the minute anatomy of well-marked specimens of the latter class of cases, that Dr. Johnson's attention has been chiefly directed; and the question which here presents itself for examination is, how far the fatty deposit described by him is to be regarded as a cause, or as an effect, of the concomitant disorder of the circulation.—*Med. Gaz., Dec.* 19, 1845, *p.* 1484.

[A number of microscopical observations have been instituted by Dr. Quain, House Physician to University College Hospital to ascertain the correctness of Dr. Johnson's theory. In fifty cases examined, only one exhibited this fatty deposition in any remarkable degree. Dr. Williams thus speaks of this case:]

Dr. Quain examined some of the matter found in the cortical portion of Mayhew's kidneys, and it presented an unusual quantity of opaque globules, which are, in fact, fatty globules, and demonstrate, that the cacoplastic deposit was here more fatty than usual.

[Dr. Quain also says:]

I have, in many other instances, observed the presence of fat globules, but not to such an extent as to induce the belief that the presence of fat could be the only organic change which had taken place. In almost every case I found decided evidence of the presence of other deposits; of what Dr. Williams has so appropriately named cacoplastic (badly organizable) lymph, such as we find in or on other organs and tissues, which have been the seat of unhealthy inflammation or degraded nutrition. This matter has been generally observed to assume—1. The form of nucleated cells, varying in size and shape, and also in the number and character of the nucleoli. 2. As simple granular matter, the nucleated cells being fewer in number. 3. In two instances I have observed the deposit to assume a distinct filamentous or fibrous character. In the two first varieties fat globules have been noticed, as already stated, to a greater or less extent. The

seat of the deposit there was little difficulty in assigning to the substance of the kidney external to the tubes. In two recent instances, owing perhaps to improved experience in manipulating, I have been able to observe the granular matter contained within the tubes themselves.

If these observations are correct, Dr. Johnson has taken a limited view of the morbid condition of the kidney in this disease. The examinations which I have made, taken in connexion with those made by Dr. Williams, and his views as to the nature of this morbid deposit, as declared in his Principles of Medicine, but more particularly in reference to the present disease, in the clinical lecture already quoted from, lead to the following inferences as to the pathology of Bright's disease—viz., that it is the deposit of a badly organizable or cacoplastic matter in the cortical substance, and within the tubes of the kidney. This deposit generally takes place in an unhealthy system, as the result of congestion, produced either mechanically as by diseased heart, or by some irregularity in the function of the skin. The same effect may be produced by the circulation of stimulants, as alcohol, with the blood. Those conditions—diseased heart, perspiration suppressed by cold, or by experimentally coating the surface with substances impermeable to this secretion, and intemperate habits, are constantly found associated with albuminuria. These facts, without entering on the causes of the disease, are mentioned with a view of showing that congestion precedes, rather than follows, the deposit in the kidney—a view confirmed by the results of treatment.

The deposits in the kidney assume the following characters:—1. The simple enlarged mottled kidney, the surface of which, on removing the capsule, is generally smooth. In this the deposit consists of simple nucleated cells, more or less mixed with granular matter. This form is analogous to the hypertrophied mottled liver. 2. The truly granular or atrophied kidney, the surface of which is rough, irregular, and generally of a pale-reddish colour. In this form the filamentous tissue, contractile in its nature, as such formations always are, exceeds the quantity of the cellular or granular matter. The latter I have observed extending to the convoluted extremities of the tubes. The contractile tissue surrounding the tubes and bodies can be readily supposed to give rise to the rough or granular formation. This form resembles the hob-nailed or gin-liver. 3. The large, flabby, fatty-looking kidney. In this the quantity of fat exceeds the amount of the other matters present. The fat is present in the substance, and probably, as shown by Dr. Johnson, in the tubes themselves. This resembles the fatty degeneration of the liver. We have thus three principal forms which this disease has been generally found to assume: minor modifications of these may be produced by the relative proportions in which these deposits are present. There is no reason to infer that one condition is the necessary antecedent of another, but that the character assumed in the first instance may be permanent. A case which has recently been under Dr. Williams' care in this hospital, seems to confirm this view. The patient had been under observation during more than five years, and after death, the kidneys were found large, mottled, and non-granular. It proves, at least, that this form of mottled kidney is not necessarily an acute disease.

*Lancet, Nov.* 29, 1845, *p.* 594.

[In a communication to the Lancet, of February 21st, there is an allusion to Dr. Johnson's paper on Albuminuria, in which the writer states that he has for upward of four years been aware of the fact, that fatty deposition in the substance of the kidney formed the characteristic feature of one form of Bright's disease; and he states that he obtained his information by reading "Gluge's Untersuchungen." The statement is as follows:]

Second form of Bright's Disease: Cirrhosis; Deposition of fat Globules in the Cortical Substance.—First stage.—Deposition of free fat globules in the cortical substance, the vascular system of the kidney not being obviously affected. Second stage.—Deposition of yellow altered fat globules within

the tubuli of the cortical substance. Blood-vessels unaffected. To this stage apparently belongs the case described by Valentin. Third stage.—Deposition of peculiar altered fat corpuscles in regular rows in the site of the tubuli of the cortical substance, the tubuli themselves having been destroyed.

So much for the originality of the idea; now for its correctness as an exclusive doctrine. I apprehend that any one, who has examined many kidneys of persons cut off with the symptoms of "renal dropsy," will have no difficulty in rejecting the notion of the fatty nature of the disease as invariably connected with fact. The truth is, that the minute anatomy of the kidney, when diseased in the mode to cause discharge of albuminous urine, anasarca, and all the well-known train of evils, varies in different cases. Gluge clearly saw this, and describes two other distinct kinds of morbid change as being present in certain cases. These kinds of change (his first and third forms), are "inflammation," and "induration of undetermined form." It is necessary to mention that Gluge gives the details of numerous microscopical communications, from which his general doctrine is derived.

*Lancet*, *Feb.* 21, 1846, *p.* 230.

[The peculiar deposition in the kidney, marked by an albuminous state of the urine and dropsical effusion, first pointed out by Dr. Bright, is not peculiar to this organ: deposited in the liver, it was termed by Laennec cirrhosis, which consists of an abnormal deposition of fibrous tissue, and Dr. Eicholtz remarks:]

In this disease, as in granular kidney, through the development of a new tissue in the substance of the organ, the capillary system of vessels, and later on, vessels of larger size, become compressed, and the affected parts are thus rendered quite anæmic, so that frequently, when cut into, not a drop of blood can be obtained from them. In advanced stages of both diseases also the affected organs present a globular appearance, and become indented with cicatrix-like depressions, through contraction of the newly-developed fibrous tissue. From this characteristic appearance Henle was led to apply the name cicatrix-tissue to the newly-formed material. That granular degeneration of the kidney and the liver do sometimes occur coincidently is quite certain, and this circumstance might already have led to the opinion, that both the degenerations cannot be the result of an especial affection confined exclusively to the organ attacked, but that the cause thereof must have a deeper seat.

[Dr. E. supposes that tuberculous cavities may be healed by the deposition of this substance in the lungs, in consequence of a peculiar condition of the blood, different from what occurs in phthisis.]

*Med. Gaz. Nov.* 21, 1845, *p.* 1287.

[Dr. Eicholtz describes numerous post-mortem examinations in which this fibro-cellular substance was found deposited, not only in the kidneys, but in the liver, lungs, and spleen. Sometimes in one viscus only, at other times in several, sometimes the new deposits seemed to have put limits to an old disease, as tuberculous formation in the lungs. He concludes by saying:]

In the foregoing part of this essay there are cases mentioned in which the kidneys alone and the liver alone were affected; others in which the kidneys and liver together were affected; others in which the spleen and liver; others in which the kidneys, liver and spleen; and, lastly, others in which the liver, kidneys, spleen, and lungs, were similarly affected. Diseases which are characterised by the deposition of a certain product in different organs, or which affect simultaneously different systems, we have long since agreed to regard as morbid conditions of the mass of blood by which all parts of the body are supplied with nutritive materials; such, for instance, as tubercular phthisis, typhus, the acute exanthemata. That in these diseases the form of the morbid process is not the same in all organs and tissues, and that the symptoms vary, requires no exposition. Each one of the diseases in question is invariably the same in its nature, *only the form* of the morbid process, and the attendant symptoms, are de-

termined not only by it, but also by the nature of the individual organ attacked, by its anatomical and physiological peculiarities. Inasmuch as it appears from the results of the above examinations that the same degeneration may occur simultaneously in different organs, that it can even supplant another disease and render it harmless to the system; so may all doubt respecting the nature of this affection vanish, and that view according to which the affection is regarded merely as the symptom of a peculiar diathesis be fully established; a view which has already frequently been advanced, although its correctness has been hitherto inferred only from symptoms. Now, however, it has received anatomical proof furnished by the results of the above autopsies. Much has been already, and still continues to be said, about Bright's disease of the kidney, yet its importance, so far as we regard it as an affection confined exclusively to the kidney, will gradually disappear, in proportion as we become better acquainted with the microscopic character of those changes which take place in other parenchymatous organs. The changes which occur in the liver have already been submitted to these microscopic examinations; not so those of the enlarged, hardened, and reddened spleen.

The conclusions which I would draw from the foregoing observations are somewhat to the following effect:

1. There is a disease commonly attacking the liver, kidneys, and spleen, which is dependent upon an abnormal condition of the blood, and is characterised by the excessive developement of a substance resembling fibrocellular tissue, by which the peculiar glandular structure of the affected organs becomes compressed, and their functions interfered with.

2. This peculiar abnormal condition, when attacking the kidneys, is known by the name of granular degeneration of these organs. If we distinguish from this granular degeneration (or Bright's disease, as it is called) the cancerous, tuberculous, and even the purulent affections of the kidney, which are sometimes liable to be mistaken for this disease, we shall still have two forms, or rather two stages, of the disease left; the one characterised by a deposit of fat, the other by the devolopement of a kind of fibrous substance. I would reject the idea of there being seven distinct degrees of this degeneration of the kidney, which is maintained by many writers; these degrees are merely artificial, and the adoption of them can be of no possible advantage; the view, however of their being two stages of the disease, is founded on nature, although it must be admitted that by the adoption of such a view little is gained towards combating this disease. The anatomical and pathological researches which have been hitherto made respecting the nature of Bright's disease can by no means be regarded as conclusive, because in no case have the obtained results corresponded with each other. Hecht observed fat, Gluge inflammatory globules, whilst Henle and myself noticed the developement of a kind of fibrous tissue. If, however, it be allowable to draw a conclusion from a single observation, it will be easy to reconcile these various results by considering the pathological appearances presented in case V. For in this case the coincident occurrence in the diseased kidneys of fat and inflammatory globules, together with cells, which were undergoing conversion into fibres, sufficiently indicates, as was stated before, that in the first place an albuminious fluid containing fatty matter was excreted; that the fat and albumen had been converted into inflammatory globules, which globules had been changed into cells, and these cells developed into fibres. Now, in comparing the results of the above with the description given by Hecht, Henle, and Gluge, it is probable that Hecht, who observed fat, saw the disease in its first stage; Henle and myself saw it in the second: whilst, again, Gluge and myself saw it when the first stage was passing into the second. There is nothing very remarkable in the idea of fat globules being converted into fibres. Fat and albuminous fluid form the basis of every organic structure, both in the ovum and in all physiological and pathological secretions. But, whether the

fatty degeneration always passes on to the fibrous one, or whether, again, the former must precede the latter, or whether the fatty matter, in chemical combination with the albumen, may not be converted at once into exudation-corpuscles, or into cells, or possibly even at once into fibres, without first assuming the form of fat globules—which seems not at all improbable—are questions which can be determined only by future researches.

3. A similar fatty and fibrous degeneration occurs in the liver. With regard to the relation in which these two degenerations stand towards each other, the same question presents itself here as was considered in the previous paragraphs. The peculiarities of a liver thus degenerated—so far as can be exhibited by the knife and by injections—together with the symptoms which characterise this peculiar condition during life, have been recently given by Oppolzer in a treatise on granular liver; in which work the pathological appearances presented by the liver are attributed to obstruction of the branches of the portal vein, resulting partly from inflammation and dilatation of the bile ducts; partly from exudations of various kinds, sometimes of fat, sometimes of other materials. Oppolzer also distinguishes granular liver from the fatty liver, although he gives no microscopic analysis of this degeneration. Although Gluge considers the fibrous degeneration to belong only to a high degree of the disease, which he names stearose, and to be a somewhat subordinate affection, yet this view is not confirmed by the foregoing observations.

4. Most interesting are those cases of commencing cure of pulmonary phthisis, in connection with this fibrous development in the liver, kidneys, and spleen. That the tuberculous diathesis was in those cases entirely put an end to, appeared not only from the obsolete condition of the miliary tubercules (which were characterised by their singular hardness, resulting from a fibrous envelope, by which they were individually surrounded), but also from the more or less perfectly formed cicatrices which had occurred. The tuberculous masses (some of which were soft, others dry and shrivelled) which were found in the interior of the contracted cavities must be regarded as the remains of an already extinct diathesis, and as no longer injurious to the surrounding healthy pulmonary tissue, from which they were separated by the cicatrix-tissue, developed around them. We have thus an example of one diathesis being supplanted by another; the tuberculous one removed and another developed in its place: for which latter we have as yet no name, and the symptoms of which are, pathologically speaking, granular degeneration of the liver and kidneys, and the peculiar condition of the spleen above described. If a tuberculous cavity can heal, so, of course, may the phthisical diathesis become extinct, no subsequent accession occur, no fresh material be deposited; the cicatrisation of the cavity may occur either without any disturbance taking place in other organs, or else the process may be an excessive one, and development of the fibrous substance, which is to affect the cicatrisation, may also take place in other parts, in which there is nothing to be cicatrised; as, for instance, in the liver, the kidneys, and the spleen.

Since after the above remarks it cannot be denied that a fibrous degeneration may proceed from a fatty degeneration, so may another explanation, different to any yet given, be offered of the occurrence of fatty liver in tubercular diathesis. It cannot be correct to regard the fatty liver as compensating for deficient respiratory functions, because this degeneration is peculiar to the tubercular diathesis generally, and not merely to pulmonary phthisis. Besides, the liver is not the only organ in which fatty degeneration occurs; fat, whilst it disappears from all other parts, is frequently deposited in internal organs. Thus, Bizot observed in tuberculous disease not merely a general loss of substance in the heart, with thinning of its walls, particularly those of the left ventricle, but he has also given the *particulars of* four remarkable cases, the subjects of which were females, who *died of pulmonary* phthisis, and in all of which the lower half of the ante-

rior wall of the right ventricle was converted into a fat-like tissue, the muscular substance being pale, thin, and seemingly in part absorbed. If we may consider a natural cure in its strict sense to consist in one organ becoming sound at the expense of another inferior to it in importance, then I would regard the peculiar deposition of fat, which occurs in tubercular diathesis, as an effort of nature to restore to its normal condition that state of blood which is found in the tubercular diathesis: which effort is not in all cases restrained within given limits, but may become excessive, and thus endanger life in another way. *Med. Gaz., Dec.* 5, 1845, *p.* 1384.

[On the pathology of albuminuria, Dr. Ayres says:]

In papers already before the public in the Lancet, I have entered, as fully as our present knowledge will admit, into the chemical changes of the blood and urine which accompany this affection, and I have ultimately referred it to a deficiency of the process of respiration, whereby albumen and the other proteine compounds do not undergo their natural decomposition, but are retained and accumulated in the system, giving rise to the congestion of the kidney, and other parts, and ending in the effusion of albuminous fluid into the cellular tissue, and escape of a similar fluid in the urine.

I therefore looked upon the affection of the kidney as a secondary disease, dependent on a previous state of the blood, and I showed that it was a natural result of the continued ingestion of alcoholic fluids, which being decomposed or oxygenated with greater facility, and in preference to the proteine compounds, give rise to an accumulation of the latter, and the retention of a proportionate quantity of water, to hold them in solution. Hence arises deficiency of perspiration, and the usual diminution in the quantity of the urine, as well as the diminution of the principal normal constituent of that secretion—urea. Hence, consequently, hyperæmia, (not of blood-corpuscles, but of albuminouis fluid), and the congestion of the capillaries of both the internal organs and the cellular tissue, which ends in effusion of an albuminous fluid in the cellular tissue, and albuminous urine. I was not aware, at the time I wrote my last paper (Lancet, October 25th, 1845), that any observations had been made on the amount of lithic acid in albuminous urine; but on reference to Simon's Anthropochimie (ii. 417), I find that Becquerel has examined the urine in seven cases, and that the acid was deficient in all of them, the proportion varying from two-tenths to six-tenths of a grain in one thousand grains of urine. In the single case in which I examined the urine for lithic acid, it was in excess. I had heard that a paper was to be read by Dr. Johnson, at the Medico-Chirurgical Society, on this subject; but, unfortunately, other engagements prevented my attendance. I therefore took an early opportunity of reading the report of his paper in the Lancet, and certainly felt much surprised at discovering that the whole phenomena of albuminuria were to be referred to deposit of fat in cells, and the urinary tubes of the kidney, blocking them up, and causing congestion, and the effusion of albuminous fluid as the result of the congestion. Hence Dr. Johnson would make this deposit of fat the primary, and albuminuria the secondary disease. I certainly thought his conclusions very strange, as they could not be reconciled with the fact, that a normal quantity of urine is not unfrequent, and an excessive flow of urine has occasionally been observed. Nor does he give any explanation of the fact, that considerable deficiency of urea almost invariably occurs in albuminous urine. Another difficulty arises: if fat be deposited in the tubuli uriniferi, how is it that it does not make its appearance in the urine itself? In all the analyses of albuminous urine I have met with, and certainly, in the analyses I have made, no appearance of fat has been discovered. It is not probable, that in the numerous analyses of albuminous urine, so extraordinary a circumstance would have been overlooked. Yet, if Dr. Johnson's statements be correct, fat ought to be present in the secretion. Dr. Johnson seems to take a very limited *view of the subject.*

A still more important paper has appeared in the Lancet of to-day (Nov. 29th), by Dr. Richard Quain, in which the results of a long series of observations are given, that are in full accordance with the opinions I have put forward in the papers before alluded to. He finds that there are three chief forms of disease of the kidney connected with albuminous urine; the mottled kidney, containing an abnormal development of nucleated cells, with more or less granular matter; the granular and atrophied kidney, containing filamentous contractile tissue, and less cellular and granular matter; and the large, flabby, fatty-looking kidney, where fat is present in the substance and in the tubes.

Now the inferences he deduces from his observations are, that a cacoplastic, or badly organized deposit, occurs in the kidney, not as a primary, but as a secondary affection, dependent on the state of ill-health; of disease of the heart; irregularity in the function of the skin, or the circulation of alcohol in the blood, as in dram-drinkers. He therefore allows, and supports the opinion, that albuminuria depends on a peculiar state of the system, preceding, and being the cause of, the local disease of the kidney, and not that the disease of the kidney is the cause of the albuminous state of the urine; and here his observations are strongly corroborative of the opinions I had previously published. It will be seen from my last paper, (Lancet, October 25th), that I put forward an hypothetical statement of what I supposed to be the cause of the mottled appearance of the kidney; namely, that in the continued flow of an albuminous fluid through the tubular structure of this organ, a deposit of albumen occurred, which gives rise to the mottled appearance. As we know that when the proteine compounds are solidified in the tissues, the change is effected by the formation of nucleated cells, or filamentous tissue, we might à priori, have expected that the deposit would have the appearances Dr. Quain so well describes. It is true, that the deposit of fat in the third form of disease of kidney may have some influence on its secretion, but the increase of size would show, that the chief cause, even in this instance, is congestion of the organ, produced by either of the causes already enumerated. The perfect accordance which subsists between the pathological observations of Dr. Quain and my own chemical researches on the subject, has given me great pleasure.

*Lancet, Dec.* 27, 1845, *p.* 701.

[In Dr. Alexander's Wood's "Survey of the Recent Literature of the History and Treatment of Diseases," published in the Northern Journal, he gives us some good remarks on the treatment of this formidable disease. In its acute form, the first indication is to remove the congestion of the kidneys. All are agreed that this is the best effected by blood-letting, regulated according to the intensity of the disease, and the patient's strength. Next, the function of the skin is to be restored, and the dropsical effusion to be got rid of; the former intention will be best fulfilled by keeping the patient in a warm room, giving mild diaphoretics, and the use of the warm or vapour bath. Dr. Barlow, particularly recommends tartar-emetic, since it not only restores the function of the skin, but it subdues inflammation, and equalises circulation. To remove the dropsy, we rely on diuretics and purgatives; by some, diuretics are considered objectionable, as they produce a determination of blood to the kidneys, already in a state of congestion. On this subject, Dr. Wood remarks]

Plausible as such reasoning may appear, I question if, in actual practice, the use of diuretics is ever really injurious; it has certainly been condemned both by Dr. Bright and Dr. Osborne; but, on the other side we have the testimony of Dr. Christison, who "has very seldom witnessed decided diminution of the dropsy, unless where diuresis or purging was either artificially induced at the time, or arose spontaneously," and has "even repeatedly seen the albumen disappear under diuretics." I have found great benefit from the use of nitre in this disease, which has certainly a remarkable effect in removing the uneasiness in the loins, so often com-

plained of; its diuretic effect may be amply secured by combination with digitalis and cream of tartar. To secure the full benefit of this remedy, however, it must be given in very large doses, which if the salt be largely diluted, may very safely be done. In the Posological Table of Duncan's Dispensary, the dose of this salt is set down as from gr. x. to half a drachm. In Dr. Christison's, as gr. x. to one scruple as a sedative refrigerant, and two scruples to one drachm as a diuretic. It may, however, be safely given in much larger doses. Dr. Bricklesby gave two drachms dissolved in a quart of gruel, three, four or five times a-day, in acute rheumatism; and in the same disease, Martin Solon has given from half an ounce to 15 drachms, in divided doses, in the 24 hours.—Bul. de Therap., 1843.

[This disease is far more difficult to treat in its chronic form, on account of its complications. It is of the first importance to keep up the function of the skin; and warm clothing, diaphoretics, and the warm bath are mostly to be depended upon]

Dr. Bright has occasionally seen the character of the urine change, and the dropsical effusion disappear under the use of tincture of cantharides, given in doses of from four to twelve drops in some emulsion. Dr. Wells narrates five cases of dropsy, with coagulable urine, treated with this remedy, in doses of from thirty to sixty drops in the twenty-four hours. In three of these the improvement was very decided; in one the albumen disappeared from the urine; in the remaining two no benefit seemed to result from its use. M. Monneret has since strongly recommended the same medicine. M. Gutbrod tried the ioduret of iron in two well marked cases of the disease with success. M. Alken has found benefit result from the employment of hydriodate of potass, and iodine ointment. M. Rayer has found no benefit to result from the external application of mercurial or iodine ointment. Dr. Rees, following out his idea of the pathology of the disease, of which a summary has already been given, recommends the plan of treatment usually resorted to in anæmic diseases, viz., chalybeate tonics, saline purgatives, and nutritious diet, and strongly condemns depletion. Dr. Copland has given equal quantities of the tincture of cantharides, and the tincture of sesqui-chloride of iron, with marked benefit in a few cases. In the more advanced states of the disease, the same author has seen more advantage from the preparations of iron judiciously chosen and combined with other remedies, than from any other class of medicines.

[In the treatment of the complications, Dr. Wood first speaks of dropsy, and observes that]

Dr. Christison is disposed to place much reliance on the combined use of cream of tartar and digitalis. From a drachm to a drachm and a half of the former substance is given three times a day, the patient taking at the same time a pill, containing one or two grains of the powder of digitalis, or twenty drops of the tincture may be given in a little cinnamon water. The diuretic effect of these medicines may be increased by the exhibition of a blue pill every night, until four or five have been taken. Occasionally diuresis may be established by the administration of an emetic of ipecacuanha and tartar-emetic, and sometimes even by the action of a hydragogue cathartic. Should these fail, we are recommended to have recourse to squills, infusion of broom tops, or spirit of nitric ether, or Hollands with water, or carbonate, nitrate, or acetate of potass. Many of these are condemned by Dr. Copland, as liable to disorder the stomach, and thereby farther impair digestion and assimilation, and thus accelerate the unfavourable progress of the disease.

M. Rayer prefers the decoction of the wild horse-radish to all other diuretics. Dr. Christison draws an admirable distinction between the mistaken employment of diuretics as a supposed cure for the disease, and their judicious use as a means of combating this particular symptom. He is not inclined to attach any value to the theoretical arguments of those who have supposed that diuretics may act injuriously; he condemns them in the early

stage, because, during the state of general reaction, they do not generally excite their proper action, and the urine is restored to its healthy amount with much greater certainty by subduing the reaction; that is, by antiphlogistic treatment, and also because there is no special indication for their employment, unless when dropsy is present. Rayer has often seen a remarkable diminution, and often a total disappearance of the effusion, under the use of Seidlitz or Pullna water. He also recommends cream of tartar, in half ounce doses. Dr. Christison thinks favourably of gamboge, in doses of five, seven, or rarely nine grains, given once every two days. To prevent it griping, he recommends its minute division to be secured by trituration, with the bitartrate of potash.

[Affections of the *Digestive Organs*, accompanying Bright's kidney, are difficult to manage, but much may be effected by a proper regulation of the diet, perhaps more than by medicine.]

Creosote is strongly recommended by Dr. Christison, who administers it twice, thrice, or oftener, in the course of twenty-four hours, dissolved in an ounce of some aromatic water. The taste is, however, so repugnant to some, that I have preferred prescribing it in the form of a pill; one drop of creosote, two grains of rhubarb, and one grain of extract of gentian, readily form a convenient pill. Opium is also sometimes of service, especially the sedative solution. One case which had resisted all other treatment, yielded to the use of a pill containing half a grain of nitrate of silver, and the same quantity of extract of opium. The operation of all these remedies will be much aided by the application of sinapisms, turpentine epithems, or a cantharides blister externally; in the latter case, the blistered surface may be sprinkled with the muriate of morphia. Diarrhœa may be checked by chalk, astringents, and opiates; in severe cases the acetate of lead, with opium, may be given; and if all these fail, strychnine, in combination with opium, will sometimes succeed. *Northern Jour. of Med., Dec.* 1845, *p.* 404.

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62.—TREATMENT OF DIABETES MELLITUS.—By Robert Dick, M.D.

As the cause of diabetes is uncertain, I shall say nothing regarding it, except that perhaps an inordinate use of crystallized sugar and of saccharine aliment is, if any known cause be admitted, the one best authenticated. Of the treatment, also (which I shall not discuss minutely), the management of diet and of the digestive organs must constitute a main feature. And here I would suggest a principle somewhat at variance with established practice and opinions, which is this:—

While I should certainly exclude from the patient's diet, crystallized sugar and any saccharine aliment which is observed palpably to augment the gravity of the urine and diuresis, yet I would hesitate about restricting the food to azotized substances. We must remember that sugar appears to be formed, not merely in primary assimilation from the ingesta, but also in secondary assimilation from the tissues. We must also consider that it is not sugar that causes the disease, but a certain morbid action that gives rise to the sugar. Till this morbid action of the primary and secondary assimilating processes is corrected or subdued, sugar will continue to be formed, even though it be rigidly excluded from the diet: it is formed, as emaciation proves, from the tissues. Hence, rigorously to exclude non-azotized, and perhaps saccharine aliment, is probably but to force the disease to attack (so to speak), for want of materials, the living tissues themselves. We would, therefore, allow farinaceous food at least: and in this view Dr. Prout concurs, though he does not assign the reasons we have ventured to adduce. I admit that sometimes great temporary amendment seems to follow the absolute use of animal food: but unless the cure is prompt and complete, which it rarely is, the circumstances of the patient are, soon after, aggravated, and the fatal event is apparently accelerated. It is worthy of note,

not less as regards morbid than normal secretions, a diminution or a ression of them is commonly a greater evil than an excess. The pro- biliary discharges of an irritated liver are accompanied frequently with ment, griping, and even inflammatory and febrile symptoms: from all , however, the patient may recover: but suppressed bile, for the most peedily induces coma and death. The excretion of a preternatural nt of urea is usually marked by symptoms of some urgency: its non- ation seems to produce fatal poisoning. A similar principle probably in regard to sugar and oxalic acid. And not at all unlikely in cases we flatter ourselves that we, or nature, have cured these and other es attended with overt morbid secretions, because these excretions disappeared; they have merely become latent, and the maladies on they depend have assumed their gravest and last phase.

*Med. Gaz., Nov.* 28, 1845, *p.* 1334.

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ASE OF DIABETES MELLITUS TREATED WITH SUB-ACETATE OF EAD.—By J. Kirby, Esq.

r. Kirby's patient, a Mr. Walker, was twenty-one years of age, of nerv- emperament, and affected with serious pulmonary disease. On the tieth of December, 1838, he was passing nine quarts of urine in the 24 —it was saccharine: the thirst was not excessive, but the skin was rkably dry and of a chalky feel. Mr. K. states:

rescribed one grain of subacetate of lead, with a minim of sedative n, and a very minute portion of ipecacuanha, to be taken every second ; with egg diet and mulled porter, as his ordinary drink. In four days nounced a remarkable decrease in the quantity of urine, and a consi- le improvement in his general feelings. The 9th of January he called e again, having taken his pills every second hour for twenty days. He ns a declension of appetite and increased debility; is costive; tongue ; cough less troublesome, and the pulse is much less frequent. For ix preceding days the urine varied from seven to eight pints; to-day ive, and is natural both in odour and colour. Ordered: an oiled draught he pills to be resumed to-morrow. In a month from this date, the pills h had been steadily used were laid aside, the urine being nearly healthy. Walker, considering himself as well of his urinary disease, discontinu- is visits to me. I afterward learned that his phthisical affection made l progress, and that he died, anasarcous, early in summer.

Ir. Moore, of South Anne-street, analysed the urine at the request of Mr. y, and from his notes it appears that from December to February, the Mr. Walker was taking the sub-acetate of lead, there was a marked ation in its specific gravity, which should encourage us to make use of remedy in an earlier stage of the malady.]

*Dublin Med. Press, Nov.* 12, 1845, *p.* 307.

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DROPSY WITH ALBUMINOUS URINE AFTER SCARLATINA.—By Dr. O'- Farrall.

this disease, the antiphlogistic treatment is the best in a majority of s, whether we consider the presence of albumen in the urine symptom- of Bright's disease, or of nephritis. The disease, however, may be ally subdued, and albumen still remain in the urine, with pallor of .]

hen these two symptoms survive all the others, the patient is falling the anemic state. The phenomena of anemia are quickly superadded, if sought for, will generally be found. The blanched face will be ac- panied by a similar condition of the velum palati and fauces, and a fre-

missement with bruit musicale will be discovered above the clavicle. The appearance of the urine has generally indicated a mixture, more or less considerable, of the colouring matter of the blood. If nitric acid be added, the albuminous precipitate will carry this colouring matter with it to the bottom of the vessel. I cannot doubt that this condition depends on passive congestion of the kidneys, succeeding to a more active state, and the treatment suggested by this view of the case, is that which I recommended for your adoption. The blood appears to undergo a gradual deterioration from the daily loss, and the indications are, therefore, 1st. to arrest this insidious drain upon the system; and, 2dly, to repair the anemic state by the employment of chalybeates. The acetate of lead is the remedy which has fulfilled the first indication. Two or three grains may be given thrice a-day, with the addition of a little acetic acid and distilled water. To this remedy should succeed the iron, the best preparation of which, in this case, appeared to be the muriated tincture. It is often surprising the rapidity with which the symptoms will yield to this succession of remedies. I have seen the urine, which for weeks gave, to nitric acid, a copious deposit, return to its normal state after a few doses of the acetate of lead. In one case I succeeded with the tincture of the muriate of iron alone, but only after a more prolonged use of the remedy.

[Dr. O'Ferrall's experience in these affections may be summed up under the following heads.]

1st. That the albuminuria of scarlatina, may be regarded as connected with active hyperæmia of the kidney; for which, some modification of antiphlogistic treatment is, in the early stage, required. 2nd. That the early symptoms having been subdued, a passive congestion of the kidney may remain, maintaining an albuminous or serous hæmorrhage, and finally producing the anemic state. 3rd. That the former condition may be occasionally controlled by the acetate of lead, and the latter, then, effectually removed by the usual chalybeate treatment.

*Dublin Hospital Gaz. Jan.* 1, 1846, *p.* 145.

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65.—DROPSY WITH ALBUMINOUS URINE AFTER SCARLET FEVER.—By Dr. Todd.

[Whenever lithic acid or albumen is found in the urine, it denotes an irritable state of the kidney, requiring time for its being subdued. On the actual condition of the gland in such cases, Dr. Todd remarks:]

The epithelium is so freely formed as to fill up the tubes; there is, indeed, a process of desquamation on the mucous surface of the kidneys similar to that which takes place on the skin. When these particles of epithelium pass off, as they will do generally after a time, then the dropsical symptoms will subside; hence it is most important to keep up cutaneous action until the renal secretion be completely restored, lest such matters as ought to be carried off by the skin should find their way to the kidney, and the renal irritation be thereby increased. When the irritation continues unabated, all the worst consequences attributed to Bright's disease may occur, and the patient will die from suppressed urinary secretion, with all the effects of a retention of urea in the blood. And it may be noticed, that it is in the mild forms of the disease that the dangerous sequelæ are most to be apprehended, the poison having been very imperfectly or not all eliminated.

[Dr. Todd alludes to the case of a girl who was admitted into King's College Hospital, with dropsy, following a mild attack of scarlatina. She died, and on inspection of the kidneys, the tubes were found loaded with epithelium, indeed quite clogged up with it. Although the quantity of epithelium was large, it was healthy in character: the force of the heart was *entirely* cut off, and venous congestion commencing in the Malpighian tufts *was the result.*]

It is plain that this disease is different from Bright's disease of the kidney, although it produces the same mechanical effects, and is accompanied by very similar constitutional phenomena. In this disease the epithelium is healthy in quality, and superabundant in quantity; but in Bright's disease it is unhealthy, being loaded with fat. I will not say that in this latter disease the epithelium is formed in undue quantity, but from its size and the tortuousness of the tubes it accumulates in greater quantities than it ought. In both cases the same mechanical effect on the kidney is produced, and the consequence is, that in both albumen appears in the urine. At length, however, that secretion becomes diminished in quantity, urea accumulates in the blood, and then symptoms of poisoning by urea show themselves.

It may here be remarked that urea in the blood does not poison unless there be no vent for it through the kidneys. I once injected half a drachm of urea into the vein of a dog, and the only effect produced was an excessive secretion of urine. The place where the dog was kept was literally flooded in an hour or two by the frequency and quantity of his micturition. If you find abundance of urea in the blood, and little in the urine, symptoms of poisoning will soon come on, if no improvement take place.

*Med. Gaz., Dec.* 26, 1845, *p.* 1494.

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66.—LECTURES ON THE URINE.—By Dr. Aldridge, Dublin.

*On the Putrefactive Fermentation of the Urine.*—[Under circumstances favouring the process, the urine, like other organic fluids, is liable to ferment—a suitable temperature, atmospheric air, and a ferment to cause the chemical change in the molecules to take place—the same conditions, in short, that other organic fluids require to undergo the putrefactive fermentation. The contact of atmospheric air, however, is not always indispensable to fermentation, although it more or less promotes it. Sugar may decompose into carbonic acid and alcohol, without the contact of air, because the constituents of these substances are already contained in the sugar. There must be air in the acetous fermentation, since a quantity of oxygen is required both for the removal of the hydrogen, as well as for the formation of the new compound.]

Like sugar, urine can ferment without the presence of atmospheric air; the contact of this gas promotes the process, and the liquid will ferment more rapidly, at blood heat, in an open, than in a well stopped phial; but it is capable of putrefying in the latter; and it is well ascertained that this change is capable of taking place in the bladder, a viscus which, except under extraordinary circumstances, does not contain air. The substance which usually acts in the capacity of a ferment in the urine, is a nitrogenised extractive matter. This substance, when separated from the other elements of this secretion, very rapidly undergoes spontaneous putrefaction. If urea or uric acid be isolated, either of these substances may be kept, either in a dry state, or in solution for a considerable time without change. Dissolved in the urine, in company with the extractive, they, however, very quickly ferment—just like the sugar along with yeast; so that this extractive may be regarded as fulfilling the same function in urinous as the yeast does in artificial fermentation.

Occasionally this extractive matter actually becomes converted into yeast. In the fifth number of the Dublin Hospital Gazette, is an abstract of a memoir by M. Bouchardat, in which he describes the manner in which yeast is produced. It has long been known that yeast consists of globules, visible in the field of the microscope, varying in size and form according to the circumstances of their formation. Now, M. Bouchardat shows that the contents of these globules is invariably a nitrogenised substance approaching in composition to albumen and fibrine, and that this substance in the yeast globules is contained in a membranous envelope. These globules form

themselves when any of the albuminous elements are contained in a saccharine solution; and these conditions are present in the urine whenever that fluid contains sugar. Now in disease, this secretion sometimes contains large quantities of sugar, and in perfect accordance with the premises, yeast globules under such circumstances invariably becomes formed. But the extractive matter of the urine does not sufficiently approach to the composition of albumen to produce a perfect yeast; the globules thus formed, unless albumen itself be accidently present, are incapable of exciting the vinous fermentation, instead of which they produce what is called the viscous fermentation, the products of which are lactic acid and mannite—the sweet principle of manna. The latter, however, has been ascertained by M.M. Boutron and Fremy, not to be a necessary product; and, indeed, I have sought for its presence in fermented diabetic urine without success: but lactic acid is under such circumstances evolved in considerable quantities, and is the cause of saccharine urine becoming more and more acid by being kept. Now this is exactly analogous to what M. Bouchardat has shown to take place when the brains of adult and young animals are successively employed as ferments of saccharine solutions; in the former case the fermentation which takes place is of a different nature from that which occurs in the latter.

During the process of fermentation, the contents of the yeast globules become changed: a slow oxidation takes place, new principles become generated, and they lose their power of instituting fermentation in saccharine liquids. The globules now unite together, one after the other, and true confervoid filaments become formed. These vegetables, thus curiously generated, get the name of torula, and although produced originally without seeds, contain in every cell, numerous spores called collectively the endochrom, and which it is probable are capable of producing plants similar to the parents. We may perceive from the foregoing observations, that diabetic urine, or that which contains sugar, during its fermentation produces yeast, lactic acid, and a vegetable called Torula. That the acid generated under these circustances is the lactic, I have proved by the addition of oxide of copper and slacked lime, in the manner described by M. Pelouze, in a memoir, an abstract of which is given in the 15th number of this Journal.

Urine which does not contain sugar, forms during its fermentation acetic acid. The presence of this acid in putrid urine has been ascertained by M. Liebig. In my last lecture I have shown you that it is from that portion of urinary extractive which is soluble in alcohol, that acetic acid is generated in fermentation, and at the same time I furnished you with reasons for believing that this extractive soluble in alcohol is a combination of a nitrogenous substance, with something resembling sugar or dextrine. That grape sugar does not exist in healthy urine can be proved readily enough, but that some of the other varieties of sugar may be present in this secretion seems exceedingly probable: and, indeed, in no other way can we account for the tendency to the production of acetic acid. It is not only probable that sugar is contained, in some form or other, in the urine, but also in the perspiration, and for a similar reason, namely, the formation of acetic and lactic acids. Ordinary perspiration contains lactic acid, and in the profuse sweats of rheumatic fever, the sense of smell can detect the odour of acetic acid. The sweat also contains ammonia: Mr. Faraday permitted some clean sand previously destitute of ammonia, to pour across his hand, when, after this brief contact, ammonia could be detected in it. Neither lactic nor acetic acids, nor ammonia are contained in the blood. That which escapes from the blood to form the secretion of the skin is its serum: this fluid is chiefly a solution of albumen; the water evaporates; the albumen dries into a varnish that protects the highly sensitive surface, which varnish is called cuticle; but this cuticle must itself decay, and it is most likely from its decomposition that the ammonia and acetic or lactic acids originate.

Albumen is formed in vegetables (from whence all the albumen of animals

is derived) by sugar combining with ammonia, and the mixture losing a certain quantity of water and oxygen. Four atoms of sugar and six of ammonia losing thirty atoms of water and four of oxygen, can furnish one atom of albumen. If albumen is formed by the union of sugar and ammonia, it is plain that the two latter compounds may be formed by the decomposition of albumen. It is likely that the albuminous cuticle may suffer this waste, and the sugar fermenting as fast as it is generated may produce either lactic or acetic acids. And as with the skin, so with the lining membrane of the urinary passages: these also sweat; their perspiration is in like manner, serous; the albumen in the same way, cakes into a modification of cuticle, which is called epithelium; and this epithelium in part escapes unchanged, in part decomposes, it is likely, into ammonia and sugar; and the latter, by its fermentation, generates lactic or acetic acid, according to the nature of the ferment.

Although acetic acid is formed during the fermentation of urine, it does not necessarily on that account acquire an acid reaction; on the contrary, this fluid by putrefaction, except in diabetes, becomes alkaline. This alkalinity is due to the decomposition of the urea. Urea is composed of the radical of carbonic acid (carbonic oxide=CO) and the radical of ammonia (amidogene=$NH_2$:) to convert urea into carbonate of ammonia, it is only necessary for it to appropriate the elements of an atom of water; and inasmuch as urea is the preponderating element in the urine of the mammalia, the carbonate of ammonia which in this manner becomes generated, bestows its character on the results of fermentation of this fluid, and the product is consequently alkaline. Now, the earthy phosphates which we noted in our last lecture as constituents of the urine of carnivorous mammalia, are rendered soluble by an excess of acid; and this excess being neutralized by the ammonia proceeding from the putrefaction of the urea, these phosphates are no longer capable of remaining in solution, and are consequently precipitated: the phosphate of lime in the form of an amorphous powder, the phosphate of magnesia in combination with ammonia, in crystals, to which are given the name of ammoniaco—magnesian phosphate.

Uric acid, likewise, is apt to ferment; this substance is a compound of urea, and a peculiar substance named by Liebig urile; urile is a compound of two atoms of carbonic oxide and one of cyanogen; it differs from oxalic acid merely by having an atom of oxygen replaced by an atom of cyanogen; oxalic acid being

$$=C_2\,O_3\,;\ \text{urile}=C_2\left\{\begin{matrix}O_2\\ \hline \\ cy\end{matrix}\right.$$

Now, it is clear that by exchange with the elements of an atom of water, oxalic and hydrocyanic acids are capable of being produced:

$$C_2\,O_2\,Cy + H\,O = C_2\,O_3 + Cy\,H.$$

but the hydrocyanic acid seems immediately to react on water, forming formate of ammonia; for cyanogen you will recollect, consists of two atoms of carbon and one of nitrogen; and formic acid of two atoms of carbon, three of oxygen, and one of hydrogen; ammonia consists of one atom of nitrogen and three atoms of hydrogen; so, if you suppose one atom of hydrocyanic acid to react on three atoms of water, you have only to imagine the nitrogen of the former to be replaced by three atoms of oxygen; and the three atoms of oxygen of the latter to be replaced by the atom of nitrogen, and the result will be formic acid, and ammonia:—

$$C_2\,N.H. + O_3\,H_3 = C_2\,O_3\,H + N\,H_3$$

Now, the urine of birds we have seen in our first lecture to be principally composed of uric acid; and during its putrefaction, oxalic and formic acids, and ammonia become abundantly generated. This putrefied urine constitutes the manure called *guano:* and if you refer to the fifteenth number of the Dublin Hospital Gazette, you will find its composition to be chiefly urate of ammonia, oxalate of ammonia, and lime, and certain salts, among which formates are capable of being recognized.

The foregoing considerations lead us to perceive that many products proceed from the fermentation of the different elements of the urine. The extractive matters may yield yeast, acetic acid, and ammonia; the epithelium may give origin to sugar, lactic or acetic acids, and ammonia; the urea gives rise to carbonate of ammonia; and the uric acid to oxalic acid, formic acid, ammonia, and, it may be, traces of hydrocyanic acid. But the important pathological fact is, that these decompositions may take place independently of each other, and even while the urine is yet contained within the system. In our last lecture we have seen that in the herbivorous mammalia the urine is discharged alkaline, containing very little urea; this proceeds from the decomposition of the urea into carbonate of ammonia within the organism; and, in disease, a similar chemical change occurs in man. When the human animal is afflicted with gout, the urinous extractive undergoes the acetous fermentation, and the urine consequently becomes highly acidified; and the uric acid being liberated from the bases through whose agency it had been dissolved, by the acetic produced, precipitates under the form of crystals. In other cases the uric acid alone ferments, and, as a result of its decomposition, oxalate of lime becomes generated. The products of these several changes become of immense importance in the diagnosis of disease; and this is the point of view under which they are chiefly interesting to the physician.

*Dublin Hospital Gaz., Nov.* 1, 1845, *p.* 81.

[Dr. Aldridge next adverts to the characters of the urinary secretion, in a state of disease.]

The first thing that attracts your attention, upon proceeding to examine a specimen of urine which you suspect to be morbid, is its appearance; whether it be colourless, amber, saffron, red, &c.; whether it be transparent or turbid. You then test it with red and blue litmus papers, alternately, to ascertain whether it be acid in its reaction, neutral, or alkaline. You next determine its density by a specific gravity bottle, or an urinometer. And, finally, you set some of it aside, to observe whether it will deposit a cloud or sediment, or throw up to the surface a cream, or crystallize on the sides of the vessel. The urine which you thus examine should be submitted to observation as soon as possible after emission; it ought to be collected in a perfectly clean vessel; if the patient have leucorrhœa, or is menstruating, it should be removed by the catheter; its density should be taken at a constant temperature (60°F); and the test glass in which it is permitted to deposit ought to have a calibre of at least half an inch in diameter.

[Different persons secrete different quantities of solid constituents in the urine, hence the specific gravity varies; indeed, it depends on the quantity passed in a given time. Dr. Aldridge observes:—]

It may be taken as an approximation to the truth, that when the average density is from 1,020 to 1,025, the quantity of urine passed in twenty-four hours is from a pint to two pints and a half; when the average density is from 1.015 to 1.020, the quantity is between two and three pints; and when the specific gravity averages from 1,010 to 1,015, the quantity is from two pints and a half to four pints. Now, when these relations are not maintained, the chances are, either that the solid constituents of the urine are abnormally increased or diminished, or that some new and morbid element is added to the urine. Let us suppose that the quantity of urine secreted by an adult man in the course of a day be a pint, and that its density be 1,010, that is probably a case of suppression of urine, and the continuance of such a state would most likely be followed by the ordinary symptoms of that disease. Again, if an adult secreted three pints of urine per diem, whose specific gravity was 1,025, that persons' urine might owe its high density to an excessive and diseased secretion of urea, but more probably to the addition of sugar or albumen. These anomalies become

much more important signs of disease when the comparison is made between the secreted fluids of the same individual at different periods.

In endeavouring to ascertain the reaction of the urine by means of blue and red litmus, you should note the alteration, if any, which takes place when a minute's time has elapsed; sooner, the reaction may not have taken place, and a prolonged immersion may deceive, by washing out the colouring matter. If the urine be very acid in its reaction, and deposit a red, pink, buff-coloured, or white precipitate, upon being allowed to cool in a tall glass vessel, the chances are that this precipitate is composed of urates or uric acid uncombined. If, upon pouring out the urine, the bottom of the vessel be stained with an even powdery coating of the deposit, it is likely to be the lithates; if hard crystalline grains adhere to the sides and bottom of the vessel, uric acid is probably present. In the former case the precipitate is usually copious, and dissolves upon the application of heat; in the latter the sediment is generally scanty. The former precipitate presents the appearance of a powder when viewed by the microscope; the latter, that of yellowish crystals, in diamond-shaped plates or prisms. Either precipitate, if placed on a bit of glass, and dissolved in a glass of nitric acid by a gentle heat, then evaporated to dryness, and held over strong water of ammonia, so as to be exposed to the action of the escaping gas, will yield a magnificent red colour, produced by the formation of murexide.

If either an acid, neutral, or alkaline urine be turbid on emission, deposits a white, yellowish, or red sediment, and is not rendered transparent by the the application of heat, it contains either one or more of the following substances:—phosphates, oxalate of lime, cystine, mucus, pus, or blood. If it is rendered transparent by the addition of acetic acid, the sediment is composed of phosphates. If dissolved by water of ammonia, the precipitate is cystine. If unaffected by either of the above named reagents, but dissolved by nitric acid, it is oxalate of lime. If the sediment be whitish, and undissolved by any of these means, the chances are that it is pus or mucus —if red, that it is blood.

It is, however, by the microscope that the discrimination of these different precipitates is most easily and permanently effected. The earthy phosphates appear as amorphous powders; ammoniaco-magnesian phosphate is seen under the form of transparent triangular prisms, with the ends cut off as inclined triangles; oxalate of lime appears as octohedral crystals; cystine as five-sided plates clouded in the centres; mucous and pus globules as minute, irregularly spherical bodies, with granulated surfaces; and blood globules as bodies still more minute, of the shape of a shilling, and yellowish colour. The phosphates are seldom found in urine, unless it be alkaline, neutral, or at least very feebly acid. The other elements which have been mentioned may occur in urine, whether acid or alkaline. When the mucus or pus occurs in alkaline urine, the globules become in great part destroyed, and the pus or mucus becomes converted into a gelatinous tenacious mass, whose properties are sufficiently characteristic.

When urine continues turbid or milky, after being allowed to stand for some time, this appearance is due to oil, divided as in an emulsion throughout the fluid. This oil can be separated by agitating with ether, in the proportion of one-third the bulk of the urine, and then permitted to settle: when, after a time, the ether will swim at the top, holding the oil in solution, which may be obtained by the evaporation of the ether. The different sediments of the urine vary in the facility with which they subside. The epithelium, except when pus is present, constitutes the lowest stratum; the lithates of phosphates, when present, form a layer over the epithelium; and the blood globules, if such there be in urine, form the uppermost stratum. However, this order is completely deranged, if the liquid be agitated after the sediments have been formed.

You will recollect that the foregoing description relates to recent urine; when putrefaction sets in, the urine ordinarily becomes alkaline, phosphates

are deposited, and a film of extractive, mixed with crystals of the double phosphate of magnesia and ammonia, forms on the surface. In the qualitative examination of the urine, it is not only necessary to study the deposits, clouds, and cream, but also to investigate the nature of the dissolved constituents. In the present state of our knowledge, the most important of these soluble elements are bile, albumen, and sugar. The best test for bile that I am acquainted with, is that recommended by M. Donné; to drop, at a short distance from each other, on a plate of glass, urine and nitric acid, when the liquids, gradually spreading, at length mix; the line where the two fluids come in contact may be examined by an achromatic microscope, and if bile be present, the result of this mutual reaction will be the production of a green colour.

Albumen is easily detected by the joint influence of heat and nitric acid. If urine becomes turbid when heated, and precipitates a white sediment upon the addition of nitric acid, it is most likely to contain albumen. Even under such circumstances there are certain fallacies, and these I shall endeavor, by and bye, to point out to you. The presence of sugar is beautifully manifested by Mr. Moore's test. Boil the suspected urine with about an equal bulk of water of potash; if sugar be present, the liquid will assume a deep porter or beer color, in proportion to its quantity.

You perceive that for the qualitative examination of the urine very few instruments or reagents are requisite. A microscope, with a power of three hundred diameters, a few test glasses, and phials containing nitric and acetic acids, water of ammonia, and water of potash, with some slips of blue and reddened litmus, and an urinometer, are all that are necessary. A few drops of nitric acid added to a given specimen of urine, will throw down the urine and hippuric acids; after the addition, set aside for some hours, and these acids may, by their microscopic characters be readily discovered in the deposit. When the addition of nitric acid causes a whitish precipitate, which does not disappear upon the application of heat, you may be sure that the effect is produced by the presence of albumen. If the nitric acid causes a greenish coloration of the liquid, it shows the presence of bile. Nitric acid is also employed for detecting the presence of urea, but I will describe to you the method of its use for this purpose, when we come to the quantitative analysis of the urine.

When ammonia or potash is added to the urine, it causes the precipitation of the phosphates—the phosphates of lime and magnesia being amorphous powders; and the ammoniaco-magnesian phosphate which is formed under these circumstances being a different salt from that which I described as being common in neutral or alkaline urine, containing twice the quantity of ammonia, and crystallizing under the appearance of stars, with six or eight foliated rays. In applying heat to the urine, the best way is to have the liquid contained in a test glass, and to hold the latter obliquely over the flame of a spirit lamp, so that the heat may first reach the upper part of the fluid; in this way, by comparison with the lower part of the liquid, you can best observe the changes produced. In a case where there is but one morbid product present, nothing can be easier than the qualitative examination of the urine. It is only when you have a combination of differently morbid conditions, that difficulty arises. I shall now endeavour to point out to you the means of unravelling some of these complicated mixtures.

Suppose there was presented to you a specimen of urine to examine, which was high coloured, neutral, with a yellowish amorphous deposit; that upon the addition of nitric acid and agitation, this deposit did not seem to dissolve; and that upon the application of heat no apparent change took place. The urine in this case would be albuminous, with a deposit of earthy phosphates. The urine did not coagulate by heat, on account of its alkalinity; for neutral or alkaline urine will not coagulate by heat, although albuminous; and the coagulation of the urine by nitric acid, would disguise the solution of the phosphates by the same reagent. In instance, acetic

acid would dissolve the phosphates without coagulating the albumen; and nitric acid and heat would afterwards detect the presence of the latter.

Again, suppose a specimen of urine, high coloured, acid, and depositing a copious powdery sediment, which disappears upon the application of a gentle heat, but upon raising the temperature to ebullition, a copious white and flocculent precipitate is thrown down. The urine in this case would be a highly concentrated specimen, containing a more than ordinary proportion of the earthy phosphates; and Shaffner has shown that solutions of the phosphates of magnesia and lime are decomposed at a boiling temperature, subphosphates being precipitated. That the phosphates of the urine are frequently precipitated by ebullition, was first pointed out by Dr. Rees, and it is now a phenomenon sufficiently familiar. In this case the addition of a little nitric acid, causing the resolution of the precipitate, would point out its difference from albumen. Let us suppose another specimen of urine—high coloured, transparent even in the cold, and alkaline, which would remain unchanged by the application of heat, but which would instantly precipitate upon the addition of acetic acid. Such a specimen would consist of a highly concentrated urine, in which the urates were kept dissolved by an excess of alkali, but upon the latter being saturated by an acid, they would instantly precipitate. That the sediment proposed under such circumstances was composed of urates, could be easily proved by their disappearing upon the application of heat. The foregoing are some of the most common and difficult complications which you will meet with in practice; but a little experience will soon enable you to detect their true nature. *Dublin Hospital Gaz., Nov. 15, 1845, p. 102.*

*Rheumatism of the Kidneys.*—This is the only disease in which I have ever observed an excessive secretion of urates. You are to recollect that a specimen of urine permitting to subside, on cooling, a bulky deposit of urates is no proof that the individual who passed it secreted an excess of these salts; for their subsidence may have proceeded not so much from their superabundance as from a deficiency of the water necessary for their solution. This is what usually takes place in febrile diseases; the quantity of urine becomes diminished, from a secondary irritation of the kidneys; and the solid constituents remaining unchanged, the sparingly soluble superurates have not enough of water for their solution in the cold. The urine, consequently, throws down what is called a lateritious sediment. But in rheumatism of the kidneys an actually increased secretion of uric acid takes place; and although, when the disease becomes chronic, an absolutely superabundant quantity of urine may pass daily, it will deposit superurates copiously upon cooling. If a patient subject to rheumatism in other parts, complains of burning heat in the loins, and passes abundant urine, which upon cooling deposits superurates, I should be led to diagnose rheumatism of the kidneys.

*Gout of the Kidneys.*—When gout attacks the kidneys, the urine undergoes the acetous fermentation which I mentioned in my first and second lectures. This new acid liberates the uric acid from combination, and this latter, consequently subsides in its crystalline form. If the attack of gout be severe, the urine may also become bloody and albuminous; but a permanent deposition of crystalline uric acid from the urine would be sufficient of itself to make us diagnose gout of the kidneys. This deposition should, however, take place soon after emission, to justify this diagnosis; otherwise, if the urine be saccharine, the lactic acid formed by fermentation may soon throw down crystals of uric acid. And I have known a similar deposit to have taken place from the vessel, into which the urine had been received accidentally containing some drops of nitric acid, which had not been washed out.—*Dublin Hospital Gaz., Dec. 15, 1845, p. 136.*

*Treatment of Urinary Disease.*—It has long appeared to me a great error in the treatment of urinary diseases, the habit of regarding

tions of the renal secretion in a purely chemical light. Exhibiting acids, if the urine be alkaline, and alkalies if this liquid be acid; and modifying the food, so as to diminish the chances of sugar getting into the system in cases of diabetes mellitus: these simple and most erroneous principles satisfy and guide the majority of practitioners in their treatment of urinary diseases. This error is not peculiar to the therapeutics of renal lesions; we every day see alkalies exhibited in pyrosis, not with the idea of curing the lesion of innervation, which constitutes the disease, but with the hope of neutralizing the acid secretion which is the effect. Yet, how much opposed to rational pathology is the theory upon which treatment of this kind is founded? and how ineffectual is it, usually for the relief of those diseases to which it has been applied! You will see patients suffering from gastralgia and pyrosis, taking alkalies in large quantities for weeks and months, without obtaining any permanent benefit: you will see patients emaciated and debilitated from chronic nephritis, or, as it has been most erroneously called, the phosphatic diathesis, taking the mineral acids, for a very long period, without the urine becoming a bit less alkaline. Others, having gout or rheumatism of the kidneys, will have consumed pounds of the bicarbonates of potash and soda; during their use lithates, or crystallised lithic acid, will cease to deposit; but as soon as they intermit the employment of these salts, the uric acid, unaltered in quantity, and merely kept dissolved by the alkali, will, upon the disuse of the latter, precipitate in as large quantity as ever. Theory and experience equally demonstrate the inutility of the chemical treatment of urinary diseases.

Why not treat urinary diseases on the ordinary principles of therapeutics? There are really no lesions discoverable in the various parts of the urinary apparatus, but such as you meet with in other portions of the organism. Plastic and suppurative inflammations, gout, rheumatism: alterations of nutrition, secretion, and innervation; these are all common to the different viscera of the cranium, the thorax, and the abdomen. It appears reasonable to expect, that the means experienced to be generally serviceable in a diseased condition of one organ, will be found equally beneficial in a similar disorder of another organ; although it is certainly true that the utility of the same medicine will be found to vary according to the organ affected with a given lesion; and calomel in iritis, tartar emetic in pneumonia, turpentine in sciatica, colchicum in gout, iodide of potassium in periostitis, and opium in peritonitis, are examples of medicines which manifest an antagonism to inflammations in certain organs, much superor to what they display in other instances; still they present resemblances in their physiological and therapeutical effects sufficient to entitle them to be regarded as a distinct class of medicines; and in many cases they may be advantageously substituted for each other. Not the less, therefore, is the knowledge of the lesions of the urinary organs, and of accurate diagnosis, guides to the groups of the therapeutical means amongst which you will have to select; although the determination of the particular remedies, especially serviceable in any given lesion located in some portion of the urinary apparatus, may be the specific province of experiment.

A strict adherence to system would therefore lead me to describe the treatment of urinary diseases, in the suite of their pathology and diagnosis; and if I pursue on the present occasion a different system, it is not because the pathology and diagnosis of these diseases are insufficiently developed for the purpose; for I consider that although we have much to learn with respect to the diseases of every viscus, the knowledge of urinary disorders has so rapidly progressed within the last few years, as to have now arrived, at least, to a level with other departments of medical science: but, unfortunately, this knowledge is but very little diffused among the members of the medical profession: philosophical views of the nature of disease are seldom entertained; the majority of practitioners still continue to wander through the misty regions of diathesis; and in place of looking through symptoms

into lesions, are contented to rest on the superficial and sensible consequences of diseased action. To render this lecture as generally useful as possible, I shall therefore tell you the treatment proper to each urinary indication, instead of that required by the governing lesion. And in this way, I hope to be enabled to bring together into one view, the pathology, diagnosis and appropriate treatment, in such a manner, as that each of these subjects, may throw light upon the others.

*Treatment of Diabetes Insipidus.*—This is the name given to a symptom of urinary disease, in which an excessively increased quantity of water is habitually secreted from the kidneys, without any alteration of the solid elements of the urine. The specific gravity of this liquid, becomes consequently very much reduced. This symptom appears to depend on altered innervation, and it is best treated by the internal use of antispasmodics and mineral tonics, with the external employment of stimulating liniments to the spine.

*Treatment of Lithic Acid Deposits.*—These deposits are either crystalline or amorphous. When the urine for any length of time continues to deposit after each emission, the rhombic prisms of lithic or uric acid, this circumstance is an evidence that the kidney is affected with gout; under such circumstances the immediate danger is the formation of a calculus; and to obviate this it is desirable to exhibit either bicarbonate of soda or potash, in doses of ten grains or a scruple, dissolved in half a pint of water three times a-day, so as to render the urine neutral or alkaline: but this effect being obtained, the practitioner ought to direct his efforts to subdue the gout, which is the cause of the symptom. If the urine be albuminous or sanguinolent, and there is much pain in the loins, it shows the attack to be of an inflammatory character, and to require a treatment locally antiphlogistic: otherwise recourse may be had to colchicum, or whatever remedy the practitioner prefers in the treatment of podagra. If the lithic acid deposit be amorphous, its precipitation may depend either upon an excessive secretion of the solid constituents of the urine, or upon a deficiency in the secretion of water. In the former case, the specific gravity of the urine becomes normally increased in proportion to its quantity; and this symptom is usually dependent on rheumatism of the kidney. The treatment should, of course, be directed to the rheumatism; at the same time it is desirable to hold the excessive lithates in solution by means of alkalies. Iodide of potassium is a medicine that fulfils both indications, and given in doses of five or ten grains three times a-day, will usually be found serviceable.

When the amorphous lithates become deposited from a deficiency of water, the quantity of urine will be ascertained upon inquiry, to be less than usual. Sometimes, however, the patient is deceived as to this point, by the concentrated and stimulating secretion demanding frequent evacuation: under all circumstances it is most desirable, for diagnosis, that the daily discharge of urine should be measured. Diminution of the watery part of the urine, may be produced by irritation of the kidneys either idiopathic or symptomatic; or it may be the result of a lesion of innervation; or it may be the consequence of a vicarious watery secretion from some other organ.

When the deposited lithates are of a brick red colour, the scanty secretion of water which produces their subsidence, is the effect of the first of these causes; in that case, a fever, either essential or symptomatic, exists; and the remedies calculated to remove the fever are those fitted to increase the urinary secretion, and diminish the lithic deposit. If the deposited lithates be pale or buff-coloured, the chances are that they are caused by a nervous diminution of the watery element, connected with that weakened action of the ganglionic nervous system to which the name of dyspepsia is given; if such be the case, the internal exhibition of a scruple of alum in half a pint of water, three times a-day, will soon remove the tendency to lithic acid deposit. A pink colour of the sediment is usually found in connection with an imperfect discharge of the biliary functions.

*Treatment of Phosphatic Deposits.*—These deposits when principally crystalline, generally depend upon the urine being deficient in acidity: in that case, the treatment will be described under the head of alkaline urine. Sometimes when the bladder has been long diseased, a copious deposit of amorphous phosphates subsides from the urine; it is always under such circumstances accompanied with pus; and the indications which are thus afforded for treatment I shall hereafter mention.

*Treatment indicated by weakly Acid, Neutral, or Alkaline Urine.*—In my last lecture I pointed out the circumstances under which the urine becomes diminished in acidity, whether in health or disease. If the urine be neutral, or weakly acid, from a vice of secretion, it usually shows that the kidneys are inflamed. I have already described to you the differential diagnosis of acute nephritis, chronic nephritis, and the renal complication of typhus fever. In acute nephritis, the employment of general and local depletion, as well as the exhibition of emollients, and contra-stimulants, must be regulated by the severity of the disease, and the state of the constitution, according to the ordinary principles by which inflammations are combatted: I am persuaded that I have seen much benefit from large (ϑ) doses of hydriodate of potash in this disease. In chronic nephritis, you will find great benefit from local depletion and counter-irritation, especiallly from the establishment of setons in the neighbourhood of the affected glands. In the renal complication of typhus, large blisters to the loins, and the internal administration of wine, are usually indicated; small doses of oil of turpentine will, in these cases, often increase the quantity and restore the acidity of the urine.

*Treatment of the Oxalate of Lime Deposits.*—Although there can be little doubt, that oxalic acid is generated in the urine by the putrefactive decomposition, and often occurs subsequent to secretion, in a manner totally independent of disease, yet it is also certain that this decomposition frequently results from an essential vice of secretion. The morbid conditions which give rise to this change are not yet known; but one thing is well ascertained, that in every instance of the kind there is frequent desire to pass water, pain in passing it, and that the secretion is commonly loaded with epithelium. These phenomena proclaim the existence of irritation of the mucous membrane. Sometimes the crystals of oxalate of lime, like those of uric acid, cohere in the calyces and infundibula, forming calculi, which produce paroxysms of nephritic cholic, by their descent into the bladder. In such cases, inflammation of the lining membrane may be mechanically produced; but it is doubtful whether the symptoms of mucous irritation which usually accompany the oxalate of lime deposit, are due to the irritating contact of the sharp crystals. Whatever is the cause of the mucous irritation, it constitutes the lesion which in oxalate of lime diathesis, you are especially called on to remove; and its successful treatment requires no little delicacy in the application of therapeutical agents. Unlike acute mucous inflammation, depletion and emollients will act in this irritation injuriously if employed in the first instance; you must have recourse to tonics immediately, such as the mineral acids, vegetable bitter astringents, &c.: and having employed these means for some time, you will find the greatest benefit from alkalies largely diluted. It will be often necessary to alternate these methods of treatment for a considerable period, but you will generally find that ultimate benefit will be derived from steady persistence in their use. The form of tonic mixture which I usually employ in these cases is the following:—℞. Infusi cascarrillæ ℥6; nitratis potassæ ʒj; acidi nitrici diluti 3½; tincturæ opii ʒj; M sumat cochlearia duo ampla ter in die.

*Treatment indicated by Albuminous Urine.*—In my last lecture I have sufficiently pointed out the method of distinguishing mottled kidney from acute mucous inflammation, the two principal pathological causes of albuminous *urine.* In my fourth lecture, I gave you reasons for regarding the disease

which terminates in mottled kidney, as essentially an inflammation of the *lining* of the urinary conduits. I must refer you to the same lecture for a *list* of the other diseases in the course of which the urine becomes albuminous: but for the present, we shall confine ourselves to the treatment of the two diseases alluded to. These diseases, according to the views which I have laid before you, are both acute inflammations, standing in the same relation to each other as croup, bronchitis of the large tubes, and capillary bronchitis. Their treatment must consequently be very similar; active depletion, both local and general, the continued exhibition of nauseating doses of tartar-emetic; hydrogogue purgatives; warm baths; and all the resources usually had recourse to in active inflammations of internal viscera. Modern therapeutics have made no more valuable discovery than that of the utility of alkalies in cases of mucous inflammation. The diseases under consideration are particularly suited for continued alkaline medication, subsequent to the employment of more energetic agents. These means will require to be strenuously persisted in: but it is a common character of urinary inflammations, much to diminish the strength, and to deteriorate the constitution: this is particularly true of Bright's disease; and when this cachectic condition is produced, you will be forced to intermit your active antagonism to the local disease, for the purpose of obviating the still more imminent dangers resulting from an impoverished blood, and an exhausted fibre. Under such circumstances you must depend on an active counter-irritation, especially by setons, to control the urinary inflammation.

*Treatment of Diabetes Mellitus.*—If you agree with me in the pathology of this disease, developed in my fourth lecture, you will easily be enabled to deduce what treatment is most appropriate. I look on saccharine urine as depending on a modification of the epithelial secretion produced by an asthenic condition of the urinary conduits. If this be the case, medicines calculated to exalt the tone of the secreting capillaries, are those best fitted to restore the natural function. Accordingly, experience tells us, that the balsams, ammonia, strychnia, and other excitants, are the medicines found most beneficial, when the perspiratory secretion is suppressed; when, on the contrary, the functions of the skin continue unimpaired, much benefit is often derived from the internal use of chalybeates, alum, sulphate of zinc, or other metallic astringents. The whole system commonly shares either directly or consecutively in the debilitated condition which exists in the capillaries of the conduits, and it is therefore most desirable to employ every dietetic means calculated to increase the patient's strength. It is well, therefore, to give a moderate proportion of animal food, porter, &c., as much as is consistent with a proper exercise of the digestive functions; but from the exclusive animal regimen recommended by some, I have seen decidedly injurious results, but never any lasting benefit.

*Treatment indicated by Purulent Deposits.*—In my lecture on the pathology of urinary diseases, have been described the different sources of pus in the urine; and in my lecture on the diagnosis of urinary diseases, I have mentioned the methods of distinguishing these pathological causes from each other. We have seen that the urinary mucous membranes pour out pus when in a state of asthenic inflammation; and this circumstance sufficiently indicates the appropriate treatment. Tonics are the medicines chiefly to be relied on in these cases: decoction of the leaves of chimaphila corymbosa, diosma crenata, or arctystaphylos uva ursi, or of the root of cissampelos pareira, combined with mineral acids, will usually be found serviceable; chalybeates are also often of efficacy in these cases.

*Treatment of Hæmaturia.*—In my fourth lecture are enumerated the different sources which give origin to bloody urine. It is not our province to speak of wounds or contusions of the urinary organs, nor of general diseases, such as scurvy or purpura; we shall therefore confine our attention to vicarious and essential hæmaturias. I have told you that the seat of vicarious hæmorrhage occurring in the urinary organs, is usually the lining

membrane of the bladder. These cases you treat in the usual manner that other vicarious hæmorrhages are combated. The most efficacious treatment of essential hæmaturia consists in the exhibition of astringents, such as tannin, or styptics, such as oil of turpentine; the use of the latter is very apt, however, to convert the hæmaturia into a nephritis, but in this case the reaction of the urine with litmus paper affords a most accurate test for pointing out the critical time when you should stop the exhibition of the medicine, and cup the loins.

I have now given you the principal indications of treatment, afforded by modifications of the urinary secretions: and at this point the present course of lectures must close. It has been my object to steer as clear as possible from the published works on the subject of urinary diseases; at the same time that I wished to furnish you with principles which might guide you to a philosophical pathology, a safe diagnosis, and a scientific and successful treatment. *Dublin Hospital Gaz., Jan.* 1, 1846, *p.* 147.

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67.—A SIMPLE INTRODUCTION TO THE CLINICAL CHEMISTRY OF THE URINE.

[Those practitioners who have the opportunity, ought to make themselves well acquainted with Prout's, Bird's, and other treatises on this subject. The following remarks, however, will prove highly useful to those who fear such a voluminous work as Dr. Prout's. The fluid to be examined should be kept free from all admixtures. The quantity of urine passed during the twenty-four hours should always be noted, as also what urine has been examined, whether the morning's, or that passed during the day. Its specific gravity is to be carefully observed, also its reaction on test paper, and whether there is any sediment deposited from it.]

The acid and alkaline reaction is best shown by blue and red litmus paper respectively, these colours giving a more extended range, and thus constituting a more delicate test than the yellow and brown of turmeric paper. If the urine is acid, turbid, with a red deposit staining the sides of the vessel, we know at once that the urates are in excess; if alkaline, or even acid, of a pale colour, slightly turbid, with a light cloud floating in it, and an irridescent pellicle on the top, we presume the phosphates to be in excess, and this the more if the urine is highly offensive to the smell, and full of mucous strings. A clear pale urine may be found in connection with hysteria, with Bright's disease of the kidney, or with diabetes. A smoky colour is very indicative of Bright's disease; and a greenish tint should remind us to look for crystals of oxalate of lime.

The specific gravity is best estimated by means of a common hydrometer, made for the purpose, contained in a strong glass tube, in which it may be floated when required. The results are not so accurate as those obtained by a specific gravity bottle and a balance, but the facility of application compensates for the little inaccuracies that may arise from its use. It should be allowed to sink gently down to its level, as all the fluid that collects upon it higher up tends to weigh it down, and makes the urine seem of lighter specific gravity than it really is. High specific gravity, that is to say, all above 1,025, may denote diabetes, or may result from the patient at the time employing diuretic salts. Low specific gravity, or below 1,014, may be connected with granular degeneration of the kidney. The specific gravity, in connection with what has been already noted concerning the colour and reaction of the fluid, is to guide us in the subsequent application of our tests.

Heat and nitric acid are, for most purposes, enough; their effects are best witnessed in common test tubes, into which the urine may readily be poured, even from a large vessel, by using one tube as the guide, down the side of which the fluid may run into the other. Urine of a low specific

gravity had better be heated, and if a precipitate forms, a few drops of nitric acid should be added. If the precipitate re-dissolves, it is to be considered indicative of the presence of the phosphates in excess; if it do not dissolve, but be rather increased by the addition of the acid, it is albumen. It is to be remembered that a precipitation of the phosphates by heat may take place in acid as well as in alkaline urine.

To urine of a higher specific gravity, nitric acid may be added at once. Every precipitate that forms may be uric acid or albumen. To determine this, the fluid should be heated, when the precipitated uric will be re-dissolved, the albumen will remain coagulated. A partial or entire solution of the precipitate by long continued heat, may denote so interesting a form of disease, that the beginner would do well to call in the aid of a more experienced chemist under such circumstances. The results thus obtained should not be lost; the tubes must be set by for a day, and then it should be noted by the aid of a common pocket measure how high the precipitate stands in the fluid, occupying, for example, half, a third, or an eighth part, as the case may be. The quantity of little crystals of uric acid that have dusted over the inside of the tube should also, at the same time, be looked to.

But, suppose no precipitate forms, a reference to the specific gravity must tell us whether there is anything more to be expected, or whether we may presume that we are dealing with healthy urine. If the specific gravity be high, and the reagents have produced only slight effects, the nature of the case may tell us whether it be worth while to look for sugar in the urine. This is most satisfactorily effected by means of fermentation; about ℥ij. of the urine being introduced, with a little yeast into a phial with a perforated cork, through which the longer leg of a bent tube passes, and the whole inverted in a cup of water, where another phial, filled with water and inverted, is to receive the short leg of the tube. At a temperature above 60°, any sugar that may be present will begin to be decomposed, and carbonic acid will collect and remain for some time unabsorbed in the other phial. If no gas collects, there is no sugar in the urine; but there may have been albumen, which we have failed to detect from not adding enough acid, for a little nitric acid only renders the albumen uncoagulable—forms, in fact, a soluble nitrate, which is not precipitated by heat. A few additional drops of nitric acid will prevent any error from this cause by at once precipitating the albumen.

It remains now only to consider those cases where the urine evidently contains some soluble matter in excess, which, however, is neither albumen nor uric acid, and to notice a few appearances which are sometimes perplexing to a beginner. A free effervescence may arise either from the presence of the carbonate of an alkali, or the decomposition of urea, or that of uric acid. The first case might be solved by looking to see what the patient is taking, all neutral salts with vegetable acids being converted into carbonates of that base during their passage into the urine. The second is best determined by setting aside ℥ij. of urine in a saucer, with about a quarter of its volume of nitric acid, of course, without having applied heat, when the appearance of crystals denotes an excess of urea. The third is best solved by adding a few drops of any acid to the urine in a tube, and observing, as before recommended, the number of crystals that have formed by the ensuing day. The flaky precipitates recognised to be albumen may be seen sometimes yellow, sometimes red or pink, or covered with air bubbles. For the present it is enough to state, that these appearances result from the decomposition of the uric acid by the nitric acid, which deepens the colour of the urine, or of the urea, or any substances, as above, which effervesce on the addition of this reagent; or, lastly, the yellow colour may arise from there being nothing present to prevent the nitric acid producing this, its ordinary effect, upon animal substances.

*Med. Gaz., Jan.* 9, 1846, *p.* 73.

68.—HOW TO ASCERTAIN THE QUANTITY OF UREA IN THE URINE.—By G. Owen Rees, M. D., F. R. S., &c.

[Dr. Rees recommends the following method of analysis for determining the quantity of urea in the urine:]

Evaporate urine to the consistence of a strong syrup, and then add pure concentrated nitric acid, until the whole mass becomes more or less solid. The crystalline matter which is now produced consists of nitrate of urea. This must be washed from adherent impurities by ice-cold water, and then pressed between folds of bibulous paper to dry. These crystals are now to be dissolved in lukewarm distilled water, and neutralised with carbonate of barytes. This mixture is to be evaporated to dryness, and alcohol boiled on the dried mass In this way the urea may be extracted from the barytic salt. It may be obtained in colourless crystals, by digesting the alcoholic solution with animal charcoal, then filtering, and allowing the urea to crystallize by spontaneous evaporation. The chemical properties of urea are as follows:—

When heated on platinum foil it fuses; and, if the heat be urged, is decomposed, yielding fumes of carbonate of ammonia. It is very soluble in cold water, but more so in warm. It gives out a great degree of cold when dissolved in any considerable quantity. The concentrated solution in water will bear a heat of 212°, without decomposition; but in dilute solution it quickly decomposes at that temperature. Alcohol of specific gravity 0.816 dissolves a fifth of its weight of urea at 60° Fahrenheit; when boiling it dissolves nearly its own weight. It is slightly soluble in ether. The caustic alkalies decompose urea into carbonate of ammonia. The nitric and oxalic acids combine with urea, forming salts more or less insoluble. The crystallisation with nitric acid forms one of its best distinctive characters. Urea possesses neither an acid nor alkaline reaction; its crystalline form is that of a four-sided prism, exceedingly delicate, and silky in texture.

*Medico-Chirurgical Review, Jan.*, 1846, *p.* 155.

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69.—ON DEPOSITS OF URIC ACID, AND ITS COMBINATIONS.—By Robert Dick, M. D.

A small quantity of uric acid forms a constituent of urine. The proportion is about 0.398 in the 1000 parts, or supposing the urine voided in 24 hours to be 46 ounces, 8.1 grains of uric acid are contained in that quantity. The uncombined lactic and uric acid, according to Berzelius, is owing to the acid reagency of urine. Dr. Prout, on the other hand, questions the fact of uric acid existing uncombined in normal urine, and assigns for this view reasons which appear plausible. He is of opinion that the uric acid exists in combination with ammonia, by which it is rendered greatly more soluble, while at the same time the acid retains, though thus combined, the property of reddening litmus paper. Though this acid is displaced very readily from its combinations, yet singularly enough, the urate and the super-phosphate of ammonia are found capable of existing in solution together, and to one or both of these, in Dr. Prout's opinion, is owing the acid reaction of urine. Dr. Bird, again, ascribes the acidity of urine to free phosphoric acid; and while we regard this view as less probable and much more hypothetical than that of Dr. Prout, these, as well as other differences of opinion, prove that the real constitution of the urine is far from being fully and precisely understood. We think it not improbable that future analyses may show that the acidity of the urine is owing, at different times, to various acids, or, perhaps, simultaneously to various acids, the uric, phosphoric, lactic, and sulphuric. Dr. Prout seems to have shown, as just observed, that uric acid does not exist free in normal urine; but it is still matter for inquiry whether free lactic acid, or some super-lactate, does not *contribute*, with urate and super-phosphate of ammonia, to produce the acid *reaction of healthy* urine.

There seems reason to suspect that uric acid and its compounds are derived from chyle (particularly chyle furnished from an imperfect primary mal-assimilation), from the albumen of the blood, and, also, by destructive secondary assimulation from the albuminous textures. Urea and lactic acid are supposed to be principally derived from the gelatinous tissues. Uric acid and its compounds, in excess, are supposed more particularly to accompany and to indicate the gouty diathesis, as lactic acid does the rheumatic. In gout, the urine, previous to the attack, and often during the severity of it, deposits uric acid, the urates of ammonia and soda, with, occasionally, more or less of the phosphates of lime and of magnesia. The presence of the purpuric acid (as it is named by Dr. Prout, the murexan of Liebig), united with ammonia, gives a red or pinkish hue to the discharge.

While, during the gouty paroxysm, the salts named are escaping by the kidney, it may happen that the peculiar deposits of arthritic inflammation take place in the cartilaginous and tendinous tissues. These deposits consist chiefly of urate of soda, with occasionally small and variable quantities of the phosphate and carbonate of lime, and with the urates of potash and ammonia. They generally take place in the cartilages and ligaments, and in the areolar tissue around joints and exterior to the synovial membrane. These form what are called the chalk stones of gout. When the depositions are in considerable masses, they are incapable of absorption, or, rather, solution: but in earlier and milder gouty attacks, deposits unquestionably take place, which, re-dissolved in the œdema of the accompanying or consequent inflammation, and thus absorbed into the circulation, leave the parts nearly or altogether as perfect as before.

The uric acid deposits depend, probably, on a variety of circumstances. They are witnessed in fevers and inflammations, doubtless, partly owing to the interruption of cutaneous transpiration, which so notably characterizes these states, during which the kidneys supplement, in some degree, the suspended elimination of uric acid by the skin. They may be said to be, in some measure, pathognomonic of what may be termed nitrogenical diathesis, that condition, namely, in which more nitrogenitic food having been used and assimilated than the system requires, the blood is preternaturally loaded with albumen and fibrin. In such circumstances the circulation disburdens itself of the unappropriated superfluity, through the kidney, in the form of uric acid, or some one or more of its combinations. If the redundant nitrogenized principles do not escape by the kidney, they take either the still more unfortunate channel of arthritic deposit around the joints, or else give rise to the severest and most intractable forms of biliary and dyspeptic disease and remarkable derangements of the gastro-enteritic secretions. In other cases, they induce obstinate and extensive chronic affections of the skin, either of a phlegmonous tubercular character, or of spreading abscesses, discharging a mixture of blood, sanies, and pus. Such cases have repeatedly come under my notice.

In an individual disposed to uric acid deposits, a large meal of animal food, or even of fine wheaten bread (in consequence of the azote contained in it) is apt to produce them; while a moderate employment of these articles of diet, or the use principally of farinaceous aliment, prevents the inconvenience. *Med. Gaz., Nov.* 28, 1845, *p.* 1338.

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70.—ON SILECIOUS GRAVEL.—By Robert Venables, M.B., &c.

[Some years ago, Dr. Venables published the history of a case in which he found a siliceous deposit in the urine; about the same time Dr. Yelloly, who was making an analysis of the calculi, in the Norwich Collection, found the same substance forming the nucleus of an oxalate of lime calculus. Drs. Venables and Yelloly are the only observers we remember in

England, who have mentioned silex as a urinary deposit. The following is the method of analysis adopted by Dr. V. to ascertain its nature:]

I made a slight impression upon a glass slide; it resisted the heat of the blow-pipe, undergoing no change whatever; but when a very small portion of soda was added, and heat applied, it fused, and forming a sort of semi-opaque permanent bead. Upon increasing the quantity of alkali, as by the addition of some carbonate of potass, and heating, it fused into a mass which was deliquescent, and dissolved in water. From this solution, hydrochloric acid threw down a gelatinous-looking mass of silicia, the bulk of which was increased by evaporating to dryness; and I afterwards removed the chlorides of potassium and sodium by washing with warm distilled water. There remained two or three minute granules, of a whitish appearance, which, when contrasted under the microscope with granules of silica, prepared from flint glass by Faraday's process, so closely resembled these as not to be distinguished. Hence there can be no question that the silex, in this case, as in Dr. Yelloly's must have been of urinary origin.

In Fourcroy and Vauquelin's case, the silex was, as in Dr. Yelloly's, blended with oxalate of lime. In the instance just noticed, the earthy salts seemed the more predominant; but upon this I must observe, that the quantity spared to me for examination was so very minute, that it might be looked upon as a microscopical specimen, rather than one intended for chemical analysis.

It would be interesting to know what are the peculiar circumstances which give rise to the appearance of crystallized silex in the urine. The properties of the urine, in one instance at least, have been detailed by me in the Institution Journal, for the quarter ending December, 1829. The urine is the outlet by which noxious and useless principles, more especially if soluble, are ejected from the system. Silex may be found in many of the articles which form a principal part of our food, and hence it may be understood how Berzelius' analysis detected silex as a natural urinary constituent.

With respect to the means by which nature effects the solution of silex, there is but little upon which to form an opinion. The culms of many vegetables are covered by a glaze of silex; and if the vegetable can take up silex, we may readily imagine that the animal economy can dissolve and eject it from the system.

Silex, as a hydrate, is slightly soluble; and moreover, when recently precipitated, dissolves most readily in the caustic alkalies. The concluding observations of Dr. Yelloly upon this subject, merit attention:—"The precise modes in which silex is capable of being held in solution, have not all of them been distinctly ascertained; but this fact bears a considerable analogy to the deposition of regular crystals of rock crystal, from solutions of silex in fluoric acids or in alkalies, after such solutions have been put aside for a considerable time." *Med. Gaz., April* 3, 1846, *p.* 590.

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71.—CASE OF CHYLOUS URINE SUCCESSFULLY TREATED WITH THE BARK OF RHIZOPHORA RACEMOSA, OR MANGROVE.—By G. R. Bonyun, Esq., M.D., &c.. George Town, British Guiana.

[The mangrove plant grows on the sea-coast, the salt water canals, and the rivers as far as the tide extends. There are several species, as the rhizophora mangel, and rhizophora candel. The bark of the rhizophora racemosa has been long used by the negroes in the treatment of inordinate discharges of urine. The disease under notice is very common in the West Indies, and is very difficult to treat; it appears to be a modification of diabetes mellitus. The patient was a creole of Demerara, thirty-one years of age. It was on the 8th of May that he observed his urine was turbid and *increased* in quantity; he was ordered the tincture of iron, and in a month's

time, the urine was decreased in quantity, white, and coagulated immediately after being passed; he was costive, very weak, little or no appetite, skin dry; was ordered bals. copaib., liq. potass., turpentine, but without any relief. He underwent different kinds of treatment, and ten months after the attack was sent into the country; had no medical treatment, but was ordered to abstain from strong drink. After three weeks' absence, Dr. Bonyun reports his condition as follows:]

Urine, three pints daily, passed at four or five times, mostly in the evening white, firmly coagulating, and separating, after remaining some hours, into a substance resembling curds and whey; no odour nor saccharine taste; the mucous discharge, which was hitherto only produced by exertion during the day, now came on an hour after rising in the morning, with great prostration of strength; tongue furred and dry; eyes suffused; lips parched; excessive languor and debility; slight perspiration occasionally; more inclination to drink, and appetite rather better; violent cramps during the night; greatly emaciated, but still able to move about a little. Took decoction of cashew bark (anacardium occidentale), and thought himself slightly relieved for a time, but the symptoms returned, and continued with violence until the middle of March, the eleventh month, when, by the advice of an old negress, he took decoction of rhizophora bark, in ounce doses, four times a day. After two days, urine appeared, immediately after being passed, like ill-prepared camphor mixture, and coagulated imperfectly; general health rather better. In five days (the same treatment being continued), urine not coagulating, more limpid, with flowing particles of mucus, perspiration gradually increasing; appetite better and more natural; felt generally much improved. In seven days, felt so well that he discontinued medicine for two days, when symptoms began to return, urine to coagulate, &c. Medicine was resumed in increased quantity, and continued for several days, until all the symptoms had entirely disappeared, and the patient was restored to perfect health. After remaining in good health for some time, Mr. K——— was again attacked, and had again recourse to the mangrove bark, from which he experienced immediate relief, but being obliged to visit the town, and not having a sufficient supply, the disease increased upon him considerably, but was arrested as soon as he procured the medicine.

Within the last few months, this gentleman, in whom there appears to be a strong tendency to this peculiar disease, has had another attack in a modified form, the urine being similar to fresh milk in odour, taste, and appearance, and separating by application of wine into curds and whey. The use of the bark restored him immediately. It may be observed, that although he has had two slight returns of the disease, it has never been able to make head so as to affect his general health to any extent, or diminish his power of undergoing fatigue. The very great benefit derived from the use of this bark induced me to try it in a case of increased flow of urine, ocurring particularly during the night, with languor, indisposition to work, loss of appetite, &c., which I had under my care for some time, without being able to effect any amelioration. A wine-glassful four times a-day for three days entirely checked the inordinate flow of urine, and restored the patient to health. I have used this medicine with several other patients, and I have reason to think with benefit; but the cases have not come sufficiently under my notice to enable me to give a proper account of them. If the mangrove bark is proved to have a specific effect upon the assimilating functions, to a derangement of which I think it most probable these peculiar abnormal excretions owe their cause, it will prove to be a valuable medicine, and is, therefore, well worthy of being properly tested in the hospitals of Europe.

*Lancet, Jan.* 24, 1846. *p.* 95.

## TOXICOLOGY.

72.—PURIFIED ANIMAL CHARCOAL AS AN ANTIDOTE TO ALL VEGETABLE AND SOME MINERAL POISONS.—By A. B. Garrod, M.D., London.

[There are no poisons, except those belonging to the mineral kingdom, to which a direct antidote is known. For the large class of vegetable poisons, Dr. Garrod proposes purified animal charcoal as an antidote, and he has made numerous experiments with this substance, which show that it is applicable as an antidote to this class. He observes:]

Soluble albumen (derived from eggs, &c.), has been found to act as an antidote to the bi-chloride of mercury or corrosive sublimate, because this substance forms an insoluble compound with the bi-chloride, which is inert. Again—the soluble salts of lead (as the sugar of lead, &c.) are precipitated by the sulphates, as Epsom or Glauber's salts, alum, &c., and an insoluble sulphate of lead is formed, which exerts no injurious action on the body. Common salt will prevent the poisonous action of lunar caustic, or nitrate of silver, from its power of decomposing this substance, and forming an insoluble and inert chloride of silver. Lime, or its carbonate, will also form an insoluble and inert oxalate, when brought into contact with oxalic acid; finally, we have the acids and alkalies acting as direct antidotes to each other.

The poisons we have just considered are but few in number, when compared with the numerous class for which such an antidote has not hitherto been known. This remark applies to substances frequently taken intentionally or by accident, such as opium, and its active principles (morphia &c.) nux vomica (strychnia and brucia), and the numerous class of plants belonging to the order solaneæ, as henbane, the deadly night-shade, the bitter sweet, thorn apple, and tobacco; also hemlock, bitter almonds, and prussic acid, the aconites, &c., &c., and, in fact, to all vegetable poisons; to animal, also, as cantharides, &c. It is to such poisons that the antidote I am about to propose is peculiarly adapted, and the great advantage it possesses arises from its perfectly innoxious properties, and therefore may be taken in any quantities; also, from its being applicable to poisons so numerous and diversified in character; this substance is purified animal charcoal, the carbo animalis purificatus of the London Pharmacopœia.

Before trying any experiments on animals, I made a solution of hydrochloric acid, of the strength of the gastric juice, and kept it at the temperature of the stomach (100° Fahr.), and from this solution I found that animal charcoal had the power of precipitating strychnia, morphia, and the various matters above mentioned; hence, I came to the conclusion that, if the charcoal removed these principles from a solution imitating the gastric juice, the action of the stomach could not again separate the poison from the charcoal. To prove this theory I then made some experiments on animals: I first used strychnia as the poisonous agent, on account of its acting with certainty, and producing on all animals such definite symptoms. Two guinea-pigs were taken (about the same size); to the first, half a grain of the poison was administered, dissolved in water by means of a few drops of hydrochloric acid; in about five minutes the animal became tetanic, and soon died from asphyxia, induced by spasm of the respiratory muscles.

To the second animal was given the same quantity of strychnia, with the addition of animal charcoal to the solution until the bitterness was removed —not the slightest tetanic symptom appeared. The last experiment was repeated several times on the animal, and always with the same result. Strychnia was then given to several rabbits, and it was found that from one-fourth to one-eighth gr. was sufficient to cause death; but when from one-fourth gr. to three-fourth gr. was administered with the animal charcoal, no injurious effects were produced, even when the animals took six times the *amount* of poison sufficient to destroy them.

*Before detailing* any further experiments, I may mention that a certain

amount of animal charcoal is required; and, should less than this quantity be given, the poison will act by its excess above the antidote; for example, if an animal takes one grain of strychnia, and only sufficient of the antidote to neutralize the effect of three-quarters of a grain, tetanic convulsions, and even death, may be produced, according to the strength of the animal.

Opium was then used as the poison, in doses of ten grains, it usually destroyed the life of the dog—in smaller doses it produced great stupor. Animal charcoal was found to act as a perfect antidote either when given with the poison, or before the narcotic symptoms appeared. When experimentalizing with laudanum, we must take into consideration the effect which the alcohol contained in it may produce; for I found that a very small quantity of proof spirit (less than two drachms) was sufficient to destroy a young dog, and the charcoal would not prevent the effect, as it would absorb only a small quantity of it; so that the tincture of opium, when given with animal charcoal, will often cause the death of a young animal; but this would not be the case in man. In my experiments with opium, I have generally used a slightly acidulated watery solution. Morphia, and the salts of that alkaloid, when given with the antidote, were also found to be perfectly inert.

Ipecacuanha was then tried, and in ten grain doses, was found, in about fifteen or twenty minutes, to cause violent vomiting and retching, which continued for about two hours; but when about half an ounce of the animal charcoal was given with this substance, or soon after, the emetic effect was entirely prevented. One dog, however, after taking the ipecacuanha and charcoal, brought up some matter from the stomach, but had no retching. The cause of this was easily explained; for the animal had taken some corrosive sublimate the day before, and after death, the stomach was found inflamed; so the mere presence of the charcoal would have caused the expulsion of the contents.

Three grains of good elaterium were then given to a middle-sized dog, and half an ounce of animal charcoal; no effect was produced. Two drachms of Morson's tincture of aconite (which causes tingling and numbness, when applied to any part) were given to a dog with about half an ounce of animal charcoal; the dog experienced no ill effect. Full half a grain of Morson's "aconitina" was given to a middle-sized dog; it soon caused violent vomiting and retching, which continued for some time; then, perfect loss of sensation of the whole surface came on, the heart's action became slow and feeble, and death took place. Even one-fiftieth part of a grain was found sufficient to produce the same symptoms, and cause death. Three-quarters of a grain were then given to a dog, with about half an ounce of the charcoal, and not the slightest effect was produced, although enough was taken to destroy at least forty dogs. When aconite root, or the leaves, are given, the antidote may be administered some time after the poison.

Prussic acid was also tried: thirty minims of Scheele's strength, or that containing five per cent. of real acid, were given to a dog, this destroyed the animal; but the same quantity, with about an ounce of the charcoal, did not produce any effect. The results were found to be the same when the other vegetable poisons were used—as belladonna, and its active principle, atropia; datura stramonium; tobacco, digitalis; delphinium staphisagria, and delphinia; veratrum album and veratria; hemlock, &c., &c. It would be useless to detail all those experiments, as there is every reason to suppose, that animal charcoal would neutralize the poisonous properties of all vegetable bodies, for it seems to act chemically in the same way upon all. The effects of cantharides were also prevented by the administration of animal charcoal: for when sixteen of the flies were given to a dog, and the antidote soon after, they produced no ill effects.

*Mineral Poisons.*—I afterwards tried the antidotal power of animal charcoal on a few mineral poisons. Four grains of arsenious acid, with about

two ounces of the charcoal were given to a dog; he experienced no ill effect, not even vomiting. After a day or two carbonaceous stools were passed, and these, when boiled with a strong solution of hydrochloric acid, yielded arsenious acid, which could be detected by putting bright slips of copper into the boiling solution; but the better way to detect the arsenic, would be to heat the carbonaceous matter to redness, and collect the volatilized arsenic. To another dog five grains of arsenious acid were given, with two ounces and a half of animal charcoal; he did not appear to be affected by it, having neither vomiting or diarrhœa. So I think we may conclude, that animal charcoal is equal to any known antidote for arsenic. It has greater power of removing arsenic from its solution, than the hydrated sesqui-oxide of iron.

Four grains of corrosive sublimate, with about an ounce of animal charcoal were then administered to a dog; he soon suffered from violent vomiting and purging, and died during the night. From this we must conclude, either that the charcoal is not an antidote to corrosive sublimate, or that it was not given in sufficient quantity to neutralize the poisonous effects of the whole of the mercurial salt, and a very small quantity of this poison is sufficient to kill a dog. To another dog one grain and a quarter of the poison was given, and soon after, an ounce of the charcoal; he had slight vomiting, but recovered. Three grains were afterwards given, with an ounce and a half of animal charcoal; in about a quarter of an hour the animal felt great uneasiness, and had a viscid secretion from the mouth—he, however, became relieved in a few hours, and had neither vomiting nor purging. There is little doubt but that the charcoal is, to a certain degree, an antidote to this poison, but not much to be depended on: white of eggs, or albumen, in any other form, would be much superior, and would not be required in such large quantities. Animal charcoal will also act as an antidote to the copper and lead salts, and to various other metallic preparations; but when an antidote is known to any of these, as to the lead salts, which is capable of forming insoluble and inert compounds with them, they would be decidedly preferable to animal charcoal.

From the experiments detailed above, I think we may conclude—1st. That animal charcoal has the power of combining in the stomach with the poisonous principles of animal and vegetable substances, and that the compounds thus produced are innoxious; therefore, when given before these poisons have become absorbed, it will act as an antidote. 2ndly. That animal charcoal will absorb some mineral substances, and render them inert; but so large a quantity of the charcoal is required, that it is not so well adapted for many poisons of this class as their own special antidotes; the effects of arsenic, however, appear better combated by this than by any other antidote. 3rdly. That a certain amount of animal charcoal is required, about half an ounce to each grain of morphia, strychnia, or any other alkaloid—but, of course, much less for the substances from which they are obtained—as opium, nux vomica, &c.; a scruple of nux vomica not requiring more than half an ounce of charcoal. 4thly. That the antidote itself exerts no injurious action on the body.

*Kind of Charcoal to be Used.*—The charcoal used for most of these experiments, was the purified animal charcoal prepared according to the directions of the London Pharmacopœia, viz., by digesting bone or ivory black (used by sugar refiners) in dilute hydrochloric acid, washing and drying it; it is improved by afterwards heating it to redness in a covered crucible.

Ivory black has a certain amount of antidotal power, but would be required in very much larger quantities, containing above 90 per cent. of earthy matter. Vegetable charcoal possesses but a small antidotal power, compared with animal charcoal. Lamp black is totally devoid of the property.

*Mode of administering the antidote in cases of poisoning.*—I should recommend the charcoal to be rubbed in luke-warm water, so as to form a fluid of slight consistency, and thus it may be given in quantities of from one to

four ounces, according to the nature and amount of poison that has been taken. Emetics may likewise be given at the same time, but ipecacuanha must not be used for that purpose, as the charcoal would entirely prevent its action. Sulphate of zinc, in scruple or half drachm doses, would be the best emetic; or the stomach pump may be employed, and after these, more charcoal administered. As animal charcoal possesses this power of absorbing all principles, may it not prove a useful agent in preventing the injurious effects of animal poisons, such as rabies, syphilis, poison of serpents, &c., if applied in the form of a poultice to the parts which have come into contact with the poisons?

*Transactions of the Med. Society of London, New Series, Vol, 1, p. 195.*

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73.—CASE OF POISONING BY HYDROCYANIC ACID.—RECOVERY.—By WILLIAM GRAY, M. B., Cantab, &c.

[The following case of poisoning by prussic acid, is a valuable addition to those which have lately been recorded. The length of time which elapsed after taking the poison and the commencement of its action, consciousness and command over the voluntary muscles remaining, is extremely important in a medico-legal point of view. The patient was the son of a medical man, of temperate and studious habits, he had taken rather more wine that day at dinner than was his custom, and at night he was tempted to commit suicide—accordingly he went into his father's surgery, and took out a stoppered bottle, containing from one to two drachms of prussic acid, of the pharmacopœial strength; he went to bed, and soon after, his friends were roused by hearing a heavy body fall on the floor of his room.]

His father was almost immediately on the spot, and seeing the bottle on the drawers, dashed several buckets of water over the face of his son. This roused him. He was then taken into an adjoining room, and put to bed, the treatment consisting in holding ammonia to the nostrils, and applying heat to the spine and feet. An injection was also given, containing tincture of assafœtida. When I reached the house I found him in the following state, in which he had continued without alteration for three hours:—He lay on his back, drawing in his breath with great effort, each inspiration being accompanied by a loud gasping sound, and a distinct mucous râle. The pulse was upwards of 140 in the minute, and the respiration 36. The surface of the body was very cold; the countenance was of a dull leaden hue; the lips blue; the pupil extremely dilated, and the jaws rigid, in which state they had remained for the whole period, so that it had been impossible to administer any antidote. The treatment from this time forward consisted in holding ammonia under the nostrils, assiduous frictions with the flesh brush, and the application of heat to the surface by means of flannels warmed at the fire, and constantly renewed. At the expiration of about five hours there was some effort to vomit, encouraged by tickling the throat, and some bloody mucus was wiped from the mouth. Soon afterwards he could be made to swallow, when some warm brandy and water and some strong coffee were given him. At this time too, he could be made to answer in monosyllables, and could raise himself on his elbows. He was also perfectly sensible, but looked bewildered. At the end of about six hours he was sufficiently recovered to answer questions, move himself about, and call for lemonade, which he drank freely.

I saw him about fourteen hours after taking the poison, and found him quite well, though weak. He gave the following distinct account of the attempt of the night before:—He was suddenly tempted, as he said, by the devil, to take prussic acid, under a confused idea that it would not hurt him. He swallowed, according to his own account, a mouthful of the acid from the bottle in bed. He then got out of bed, walked round the foot of it to a chest of drawers standing within a few yards of his bed-side, placed the

stopper so firmly in the bottle that it could not be removed, and then walked back to bed, intending to get in again. He reached the side of his bed, sat down upon it, and then lost all consciousness. During all this time he said that he had no giddiness, and no unpleasant sensation of any kind, no more than if he had taken so much water. He also assured me, and his manner made me quite confident that he spoke the truth, that the idea of suicide had never before entered his head. The father of the lad has since informed me that the fæces, and, as he believes, the urine too, were expelled as the first effect of the poison.—*Med. Times, Nov.* 22, 1845, *p.* 169.

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### 74.—NEW TEST FOR PRUSSIC ACID.

In the last number of the Dublin Hospital Gazette, Dr. Austin, Jun. has suggested the following process as a means of identifying cyanide of silver when this compound is in so small a quantity as to render it difficult to procure from it cyanogen by heat. Half a grain of cyanide is to be fused in an iron or platinum capsule, with a small quantity of oxide of iron and carbonate of potash. Dissolve the fused residue in half an ounce of distilled water, filter, and divide the filtered liquor into two portions. A drop or two of muriatic acid is to be added to each portion, so as to render the liquid slightly acid, and then add to one a solution of sulphate of copper, and to the other a solution of a persalt of iron. In the former case, the ferrocyanate of copper, and in the latter, the ferrocyanate of the peroxide of iron (Prussian blue), are produced. These results furnish clear evidence of cyanogen in the precipitate, when the attempt to procure a rose-red flame by burning the gas, may entirely fail.

*Dublin Hospital Gazette, April,* 1, 1846.

[This is an ingenious and a very effectual method of identifying the cyanide of silver. We find that no metallic capsule is required; a small glass tube, one-sixth of an inch in the bore, answers effectually. Fine iron filings may be substituted for oxide of iron, and a small piece of potassium for carbonate of potash. The mixture is readily fused: when cold, the end of the glass tube, containing the fused matter, may be broken off, and the whole boiled in a small quantity of water. The solution may be easily proved to contain ferrocyanide of potassium by the addition of an extremely diluted solution of sulphate of copper (otherwise the red colour is concealed) or a solution of a persalt of iron. There is, however, one circumstance not noticed in Dr. Austin's paper. The previous addition of muriatic acid to the solution in order to neutralise the alkali, causes the production of some Prussian blue, owing to the acid forming an iron salt with some surplus iron or oxide of iron used in the experiment. This alone is clear evidence of the presence of cyanogen. In relying upon this mode of testing, it must be remembered that any kind of nitrogenous (organic) matter mixed with iron and alkali will produce when heated ferrocyanide of potassium; but it is only from a metallic cyanide that cyanogen can be procured in a state adapted for combustion. From our own experiments, we doubt whether this process of indentification is more delicate than that commonly pursued, of applying heat to the cyanide of silver, and burning the gas.—Editor of the Medical Gazette.] *Med. Gaz., April* 17, 1846, *p.* 706.

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### 75.—VITIATION OF AIR, BY CARBONIC ACID GAS.—By John Snow, M.D., London.

[In 1839, Dr. Snow related to the Westminister Medical Society, a number of experiments which he had performed, showing the effects of air vitiated by carbonic acid gas, upon animals; which were briefly reported in one

or two of the periodicals of the time. The deductions he arrives at are highly important. He observes]

There are on record a great number of cases of gradual or slow asphyxia from atmospheric air contaminated with carbonic acid gas, but the circumstances under which these accidents occur are always such as to preclude the possibility of analysing the air producing them. The greatest difference of opinion has existed amongst authors, not only with the respect to the amount of deterioration which is fatal or dangerous, but also as to whether carbonic acid is an active poison, or is merely injurious by displacing the atmospheric air; and although the experiments of Collard de Martigny show, in my opinion, the active nature of carbonic acid, they do not show the quantity necessary to produce injury or death; and I know of no experiments on animals, except those I am about to relate, which are calculated to point out the condition of an atmosphere which may or may not be fatal to persons breathing it.

Where there is more carbonic acid in the air than the fraction naturally present, there will always be a diminution of the due proportion of oxygen; but this diminution will vary very much with the manner in which the carbonic acid has been produced: if it has been given off from a fermenting vat, or separated from lime or any body with which it was in combination, it becomes added to the air, mixing with it and displacing the nitrogen and oxygen alike. In this case the diminution of the oxygen is equal to twenty-one hundredths of the carbonic acid gas present, or about one-fifth. But if the carbonic acid is the result of the breathing of a number of persons in a limited portion of air, or of the combustion of charcoal or other matter in it, then the carbonic acid gas being formed by union of carbon with the oxygen of the air, the diminution of the oxygen in a given bulk will be always equal to, and in many cases somewhat greater than the amount of carbonic acid present. As an illustration of the above difference in the constitution of the air, I may here remark that a small wax taper is instantly extinguished in air which has been contaminated by respiration till it contains four per cent. of carbonic acid, whereas twenty parts carbonic acid, or twenty-five parts nitrogen, require to be added to one hundred parts of common air, before it will extinguish the flame. In order to investigate this subject properly, I sought to determine separately the effects of carbonic acid and of a diminished amount of oxygen; and the quantity of air used, in proportion to the size of the animals experimented on, was so great that the result could not be vitiated by the products of their respiration during the experiments.

[From Dr. Snow's experiments we learn]

That five or six per cent. of carbonic acid cannot exist in the air without danger to life, and that less than half this amount will soon be fatal, when it is formed at the expense of the oxygen of the air, as it is in most cases of accident or suicide. Whilst the experiments clearly establish the fatal effects of carbonic acid, they disprove some of the arguments from which this gas has hitherto been concluded to be poisonous. It has been said that the illness following exposure to its effects, in cases where the patient was discovered before death, showed its poisonous nature; but in the sixth experiment we have illness and subsequent death after removal from an atmosphere deteriorated by removal of part of its oxygen, whilst no carbonic acid was present; and the chance of recovery after these experiments seemed to depend on the extent and duration of the previous suffering, rather than on the presence or absence of carbonic acid. It has been argued, that the blood being found florid in the body, was a proof that there was sufficient oxygen in the air, and that, hence, death resulted solely from the carbonic acid. But, in the fifth experiment, the blood in the lungs was florid, when none of this gas was present, and death arose from an insufficiency of oxygen, an insufficiency to maintain life, yet enough to redden the blood.

Carbonic acid gas caused deep and laborious breathing, but in what way

it was destructive to life, these experiments do not enable us to state. Its injurious effects seem to depend rather on its physical properties, viz., its density and solubility in the blood, than on any strictly poisonous qualities; and this view is supported by Nysten's experiments of injecting it into the blood vessels. He sums up the result of his experiments as follows: "Le gas acide carbonique injecté dans le systéme veineux en quantité considerable, mais avec les précautions nécessaires pour ne pas occasioner la distension du cœur pulmonaire, ne donne lieu à d'autre phénomene consecutif notable qu'une foiblesse musculaire qui cesse au bout de quelques jours." The experiment of Collard de Martigny, in which he was immersed in the gas without breathing it, might seem opposed to this view; but it is to be observed, that he breathed through a long tube, which process, by obliging him to respire part of the same air over and over again, would sufficiently account for all the symptoms he experienced. The appearances after death in the experiments recorded in this paper, were somewhat various, and seemed to depend, rather on the slowness or quickness of dying, than on the constitution of the air causing death. There was no appreciable congestion or other morbid appearance in the brains of those animals which died. Apoplexy has occasionally occurred to human beings under similar circumstances, but the brain of man is a much more complex organ than that of the bird and rodent. Many of these birds sweat profusely during the experiments, breathing laboriously, and placed, as they were, in an atmosphere saturated with moisture. Naturalists tell us that birds do not perspire; the fact, however, is otherwise; but, under natural circumstances, the perspiration passes off insensibly in the form of vapour, on account of the high temperature of their bodies.

These experiments agree with some points which have been observed in accidents to human beings. For instance, a contaminated atmosphere has been known to prove fatal, though it produced no inconvenience at first. Now, in the majority of these experiments, the animals were apparently not affected till after a longer or shorter time. It has been observed, that air contaminated with carbonic acid may be dangerous, although a candle will continue to burn in it, and such was the state of the air in the fourteenth and fifteenth experiments. The amount of oxygen cannot be reduced by any notable amount without danger. I mean the amount in proportion to the nitrogen; for the amount in a given space may be greatly reduced, provided the nitrogen be reduced pari passu, since, on high mountains, persons suffer only a little inconvenience, when the quantity of oxygen in a given space is reduced below what would be quickly fatal, and what would admit of the combustion of no ordinary materials, if the full amount of nitrogen were present.

*Edinburgh Med. and Surg. Jour., Jan.*, 1846, *p.* 49.

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76.—ASPHYXIA CAUSED BY CARBONIC ACID GAS.—By M. M. Bayard and Tardieu.

The particular circumstances under which the following cases of asphyxia in two persons, at one and the same time, occurred, render it one of peculiar interest. Cases of accidental asphyxia, the result of vapour disengaged from carbonised beams of wood, are somewhat rare. M. Devergie has cited a few cases in which this accident occurred from the vicious construction of stoves, in which their pipes were placed so near the beams as to occasion the gradual carbonisation of the latter. Ollivier (D'Angers) has also related a remarkable case of asphyxia in two persons at the same time, from the vapour of coke.

[A fire had been lighted in a room on the same floor as that in which the master and mistress of the house (Dricton) slept; it appears that in the construction of the house, some beams which supported the floor, passed

into the flue, which took fire, and from their being surrounded with plaister, &c., slow combustion was the consequence. M. and Madam Drieton retired to bed in the room adjoining the one in which there had been a fire, but which was put out, and in the morning were found dead in bed. On the previous night smoke was perceived in the room, and supposing it to have come down the chimney, M. Drieton closed the fire-place in his room, so that there was no way for the smoke to escape: it was this that on the previous night kept the room clear.]

*Monthly Jour. of Med. Science, Jan.*, 1846, *p.* 50.

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77.—POISONING BY ACONITE.—By Geo. Sayle, Esq., King's Lynn.

[Mr. Sayle relates the case of a man who died in consequence of taking decoction of aconite. He saw him an hour after he had taken it, when he was quite insensible, pupils widely dilated, and pulse scarcely perceptible; he was foaming at the mouth, and throwing his arms about. A tea-cupful of neat brandy was administered, which, for a time, revived him, but while the contents of the stomach were being evacuated by means of the pump, he suddenly expired.]

The plant was the aconitum napellus, stalks and leaves quite fresh. Of these, six were cut up and boiled in half a pint of beer down to a quarter, half of which he drank. Upon adding a solution of nitrate of silver, an abundant deposit followed, both in the decoction and the contents drawn from the stomach. The solution of the diacetate of lead produced the same results in larger quantity. Post-mortem examination forty-eight hours after death. Abdomen—the liver, spleen, and kidneys distended with dark blood; veins generally congested; the stomach presented a slight blush near the cardiac extremity; the whole alimentary canal emptied of fæcal matter and distended with air; the valvulæ conniventes distinctly seen from without, owing to the congested state of the blood-vessels; pelvic viscera healthy. Remaining part of the body not examined.

*Remarks.*—The case in itself presents nothing remarkable; but as they are rarely met with, I think it behoves the medical man to publish these symptoms carefully for the information of others. Dr. Fleming, in his prize dissertation, speaks of four degrees of operation in man, and finishes his remarks on the fourth degree with these words:—When the action of the drug is carried to a fatal extent, the individual becomes entirely blind, deaf, and speechless. He either retains his consciousness to the last, or is affected with slight wandering delirium; the pupils are dilated; general muscular tremors, or even slight convulsions supervene; the pulse becomes imperceptible both at the wrist and heart; the temperature of the surface sinks still lower than before, and at length, after a few hurried gasps, death by syncope takes place." It will be seen that this case and Dr. Fleming's description admirably agree, and that death takes place by syncope is proved by all the organs examined being enormously distended with blood. The quick action of the stimulus was very remarkable, and I imagine if he had been seen earlier, and the same plan adopted, although the dose was very large, it would have been attended with success.

*Northern Jour. of Medicine, Dec.*, 1845, *p.* 438.

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78.—POISONING WITH STRYCHNIA.—By James Watson, M.D., &c.

[A patient of Dr. Watson's, who was in the Glasgow Infirmary for the treatment of a disease of the scalp, took, by mistake, three pills, containing strychnia. She died in an hour's time. The particulars of this case Dr. Watson communicated to the Monthly Journal, for December, 1845, from which we extract the following:]

Agnes French, aged 13. September 27, 1845. Has been in this house since the 16th instant, for eczema capitis, which is now nearly well. About half-past five, p.m., swallowed three strychnia pills, which belonged to a paralytic patient in the same ward. Each pill contained a quarter grain of strychnia. She had been occasionally in the habit of taking medicines belonging to other patients. Twenty minutes after taking the pills, she said she felt a strange sensation in her head, and became almost immediately convulsed. The clerk was called, and visited her without loss of time. The following was her state. The arms were found extended and rigid, as also were all the muscles of her body, which was bent backwards at a considerable curve. Pupils were natural. Pulse was obscured from the rigidity of the muscles, but impulse of the heart was strong. Face was much flushed and lips livid. Breathing rapid and difficult, but larynx quite free—spasms of diaphragm very marked. Every few minutes she had a fit of general convulsions. The mind was quite entire, and great fear and anxiety for relief was expressed.

The cause at first being unknown, six ounces of blood were abstracted from the temporal artery. Cold lotions were applied to the head, and sinapisms to the extremities. Ten minutes after the symptoms began, the owner of the pills told the cause, when a scruple of zinc was immediately given, and large draughts of warm water, which were eagerly swallowed by the patient. No vomiting, however, was induced for about a quarter of an hour, although the fauces were tickled with a feather; and when the emetic operated, it acted very sparingly. All this time the opisthotonos and universal muscular twitchings had continued most violent; but now, during one of the ineffectual attempts to vomit, the rigidity of the muscles suddenly relaxed, and the spasmodic contractions ceased. The heart's impulse, previously strong, could not now be felt, and respiration was for the time extinct. Her face, which, from the commencement of the attack, had continued deeply flushed, became gradually pale, from above downwards; her lips remaining livid. She was laid down, and seemed to recover slightly; her chest heaved slowly, and her heart beat feebly, and at long intervals. The flush also somewhat returned to the face, but with the exception of a few twitches, she had no recurrence of the spasms. The pupils were now dilated—the eyes fixed and turned upwards. The stomach-pump was suggested, and immediately applied, but without any good effect. In a short time the respiration again ceased, and the heart could no longer be felt. The flush, which had been but slight, again descended and disappeared on the neck. Artificial respiration, and galvanism to the phrenic nerve, were now tried in vain. The patient was dead. Death took place at three quarters past six, p.m., little more than an hour after the poison had been swallowed, and in about three quarters of an hour after it had produced its physiological effect.

*Autopsy forty-four hours after death.*—Face placid, abdomen tympanitic, much lividity of depending parts. Post-mortem rigidity of body in general moderate, but fingers and thumbs very livid, half-flexed, firm, and somewhat elastic. Integuments of scalp bled freely on being cut. Brain and its membranes quite natural, excepting turgescence of velum interpositum and choroid plexus. Spinal cord healthy—its investing membranes rather vascular. Lungs much congested with venous blood. Muscles of heart quite stiff. The right ventricle was flattened into a sharp edge, and was quite empty. The left ventricle was also collapsed and empty. The auricles were in a similar condition. The stomach contained a half-digested meal. Its mucous lining was pale and natural. Other viscera normal.

*Monthly Jour. of Med. Science, Dec.* 1845, *p.* 908.

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79.—CASE OF POISONING BY BELLADONNA.—By Dr. GRAY, of New-York.

[The following case is one of great interest, inasmuch as the symptoms are described with great minuteness, and also from the fact of Dr. Gray

being the person who took the belladonna, and noted his own sensations during the action of the narcotic. He says:]

I had taken an unwarrantably large dose of the article in question, to quiet the pain of a severe neuralgic tooth-ache; not finding any relief, I repeated it in the course of ten or fifteen minutes, swallowing in all some eight or ten grains. About an hour after the last dose had been taken, the medicine began to induce its specific symptoms in the following order:—First, vertigo, increasing to such an extent as to render it impossible to walk without staggering. The dizziness, which was at first transient, soon became continued, and very severe. Now came on the affection of the eyesight, every object growing dim, as though a cloud were between the eye and it. Sometimes objects appeared double, and with an undulating motion passed before the eye. I observed that by a strong effort of the will, a concentration of the nervous power, this paralysis of the retina might for a moment be combated; but only to return with greater severity when the mental effort had been succeeded by its corresponding relaxation. The appearances of the eye were much the same as those mentioned in the former case—viz., pupil immoveably dilated; eye prominent, dry, and exceedingly brilliant. The conjunctival vessels were fully injected. There was a total absence of lachrymation, and motion was attended with a sense of dryness and stiffness. The face was red and turgid, and the temperature and colour of the surface considerably augmented. Pulse full, and about 120 to 130. The feeling in the head was that of violent congestion, a full, tense, throbbing state of the cerebral vessels, identically the same sensation as would be produced by a ligature thrown about the neck, and impeding the return of the venous circulation. The peculiar state of the throat next excited attention. The tongue, mouth, and fauces were devoid of moisture, as if they had been composed of burnt shoe leather. The secretions of the glands of the mouth, and the saliva, were entirely suspended. A draught of water, instead of giving relief, seemed only to increase the unctuous, clammy state of the mucous membrane. About the bag of the pharynx this sensation was most distressing. It induced a constant attempt at deglutition, and finally excited suffocation, spasms of the fauces and glottis, renewed at every effort to swallow. A little salvia, white, and round like a ball of cotton, would now and then be evacuated.

The slight delirium that followed the action of the narcotic, was of a strange, yet not unpleasant kind. I wished to be in constant motion, and it certainly afforded me an infinite degree of satisfaction to be able to walk up and down. The intellectual operations, at times, were very vivid. Thoughts came and went, and ludicrous and fantastic spectacles were always uppermost in my mind. I was conscious that my language and gesticulations were extravagant, yet I had neither power nor will to do otherwise than I did; and notwithstanding my bodily malaise, the mind was in a state of delightful exhilaration. The treatment was very simple; cold douche to the head, and an emetic, soon destroyed the dominion of the poison. In this case, as in the other, I found some difficulty in provoking the operation of an emetic, owing to the insensible condition of the stomach. After vomiting, the disposition to sleep became very urgent. Strong coffee, however, counteracted this tendency.

One other fact with reference to the effects produced by belladonna is worthy of note—viz., its tremendous diuretic power. I have observed that it does not seem to reach the kidneys, until it has been some time in the stomach, and has exerted its specific influence upon the brain. But its power over the secretion of urine seems to be very great. I am confident that I passed in the course of an hour three pints of urine, accompanied with a slight strangury at the neck of the bladder The nature, properties, and effects of atropa belladonna are so well known, that I need not enlarge this paper by alluding to the subject. As there appears to be no positive antidote to its poisonous effects, the treatment must be based upon general

principles. Reasoning from the effects it produces upon a healthy body, its indications in disease become evident. From its property of dilating the pupil, it becomes an indispensable in the treatment of iritis and incipient cataract. In many other affections of the eye, it is a remedy of essential importance. Its effects in painful ulcerations—in pertussis—in neuralgia, and in a host of nervous maladies, are universally recognised. From its effects, as observed in my own case, I am induced to believe that it may become an important remedy in diseases, in the treatment of which at present it is but little used.—*New-York Journal of Medicine.*

*Dublin Med. Press, Dec.* 24, 1845, *p.* 410.

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80.—EXTRAORDINARY RECOVERY AFTER TAKING ESSENTIAL OIL OF BITTER ALMONDS.—By FREDERICK HETLEY, Esq., House Surgeon, Middlesex Hospital.

[The patient in this case was a respectable looking female, twenty-one years of age, who had attempted suicide by swallowing the essential oil of bitter almonds. On her admission into the hospital.]

The respirations were noticed to be slow and regular, like a person under the effects of a full dose of laudanum, but the pulse small, thready, and at least 130—140, and the pupils contracted to an aperture of the size of a pin's head. She continued in this state for about three minutes, when the countenance suddenly assumed a pale livid hue, similar to that of an individual with advanced cardiac disease. An emetic was attempted to be administered, but all power of deglution had ceased. The stomach-pump was then applied, and the breathing which, both before and during the whole operation remained slow, now became stertorous.

The contents of the stomach were first drawn off, consisting of about two ounces of dark brown fluid, emitting the powerful smell of oil of bitter almonds. The stomach was now four times washed out with water, and as each basinful was drawn off, the smell of the poison became fainter and fainter. Towards the termination of the operation, the stomach regained some tone, and occasional powerful efforts were made to vomit. During this period, the bladder and rectum acted involuntarily. Before the stomach-tube was removed, a solution of chlorine was injected, and the patient was then carried up to bed, still comatose, and the pupils unaltered. On visiting her in the ward in the course of a quarter of an hour, she appeared like a person in a deep sleep, and on feeling her pulse, which still remained 140, she suddenly roused, and looking wildly about her, with a maniacal appearance, inquired where she was. The pupils now suddenly dilated to their fullest extent, and she was unable to see distinctly. She stated that she bought two pennyworth of the oil of bitter almonds, which she swallowed in the street, then threw away the bottle, and almost immediately afterwards fell senseless on the pavement. She now complained of excessive burning heat in the regions of the larnyx and pharnyx; was hoarse; and talking, she said, distressed her; some pain and sensation of heat in the epigastrium, but no tenderness on pressure. The pulse gradually came down to 100. She expressed a feeling of general numbness in her legs and arms, without pain in them; but on pinching the extremities she cried out. The arms and hands were mottled with a livid hue, and colder than might have been expected from the time she had been between warm blankets. The solution of the chloride of soda, half an ounce, with compound spirit of ammonia, was now administered every three hours, and a sinapism was applied to the epigastrium. She evinced great disposition to sleep, but was easily roused, and on visiting her at four separate periods, within two hours, she was found each time in this light kind of sleep. During the night she got up and passed her water, and would have slept during the whole twelve hours she was in the hospital, had the nurse not disturbed her to give the medicine; moreover, we strictly charged the nurse not to suffer her to

sleep for any lengthened period. In the morning the friends came forward desiring to remove her home, when she gladly and hastily dressed herself, and walked down stairs with them to a cab.

The following are points particularly worthy of notice in this unusual and interesting case:—The quantity of the poison taken was insufficient to cause instant death, as would have been the case with hydrocyanic acid, and yet the subsequent coma would doubtless have terminated fatally, if the timely use of the stomach-pump had not been resorted to. On her admission, the effects of the poison on the nervous system was gradually fading, as she could be roused; she talked incoherently, and answered questions, as before remarked; but a proof that the whole strength or power of the poison had exerted itself on the nervous system, may be deduced from the fact that the spinal column and brain were primarily affected, producing involuntary action of the sphincters, loss of sensation in the extremities, and (through the medium of the phrenic nerve), the slow breathing of narcotism, whilst, on the other hand, the vascular system was only secondarily affected, producing the rapid and almost countless pulse. The lividity of the countenance, which so suddenly attracted our notice, was doubtless from the delay of the circulation through the pulmonary system, and not from any primary or specific action of the poison upon the respiratory organs, so that this lividity may be explained on the same pathological grounds as that produced by obstructed mitral or bicuspid valves—viz., a delay of blood from the right to the left side of the heart.

It appears from the above facts, that the chief action of the poison was spent on the ganglionic portion of the nervous system; if it were not so, how would the reader explain the unusual pathological fact, that the respirations were but twelve, whilst the heart was 140, knowing, as we do, that in health, as well as in disease, those two departments of the respiratory system are nearly accurately balanced? Moreover, as a proof of the correctness of this opinion, let us bear in mind how little the muscular system was involved during the perfect coma. It required six people to control her powerful exertions during the application of the stomach-pump, when the coma was most complete. This singular occurrence is never witnessed in coma from laudanum, in stupefaction from ardent spirits, or in apoplexy, &c. I have been rather minute in my detail of the above interesting case, as it illustrates the peculiar action of a poison, which, from its rapid fatality, has seldom offered an opportunity of recording a complete train of symptoms; but, in this instance, it is particularly instructive to observe the distinct line of difference between the two parts of the nervous system involved.

*Lancet, Dec.* 6, 1845, *p.* 612.

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81.—CASE OF POISONING BY OPIUM, IN WHICH ELECTRO-MAGNETISM WAS EMPLOYED.—By J. J. Colahan, Esq.

[An infant of perfect conformation had been given 25 drops of laudanum to procure sleep. This was at one o'clock, p.m.; at eight o'clock, Mr. Colahan saw the child; the respiration was hurried, occasionally there was stridor, with other signs of acute bronchial irritation; the pulse rapid, but distinct; the physical symptoms, Mr. Colahan remarks, constituted a group exactly resembling laryngitis. An emetic was ordered; in eight hours' time profound torpor and sleep came on, when another emetic was given, and means adapted to rouse the child.

Tartar emetic solution was given every ten minutes in half grain doses, in order to relieve the lungs of the mucus. In spite of every effort, the vital energy began to decrease, and Mr. C. called in Dr. Barry, surgeon to the Maternity Hospital, who suggested the use of galvanism. It was immediately had recourse to.]

The strength of the galvanic current was at first comparatively feeble;

the shock caused by its influence, although perceptible, was slight, and proportionally diminished after application to the different most sensitive parts of the body. The strength was now increased by sulphuric acid, and a rapid current of electricity developed, to the powerful stimulus of which the infant was exposed, alternately applied to different parts. The physiological effect was now apparent, and it was not until the regulator was moved to its highest point, and the flow of electricity had reached its maximum intensity, that complete signs of revival were produced, causing involuntary muscular contractions, with frequent voluntary efforts of the child to get released from its painful position. The galvanic influence was not deemed prudent to be discontinued for five hours, at the close of which sensibility was evident and complete, with restoration of the functions of the nervous centres. Gradual and progressive recovery continued, and in a few days the infant was perfectly convalescent.

*Remarks.*—The quantity of laudanum given in this case I ascertained with tolerable certainty (from an examination made of the portion that remained) to have been at least twenty-five minims, which was corroborated by Dr. Barry, who obtained separate pennyworths, procured by different persons, and his calculation tended to a similar result. From the enormous dose relative to the child's age, and recovery from its effects, a weak preparation was supposed to have been administered. Subsequent to the reading of the paper a portion of laudanum obtained from the same stock, which had been made for some time previous, was procured by Dr. Barry, which was subjected to Dr. Christison's careful analysis, and proved to have been of regular strength. *Dub. in Med. Press, April* 25, 1846, *p.* 244.

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## VARIOUS SUBJECTS.

82.—ON THE USE OF PHOSPHATE OF AMMONIA, AS A NEW REMEDY FOR GOUT AND RHEUMATISM.—By T. H. Buckler, M.D., Baltimore.

[The testimony in relation to the treatment of gout and rheumatism, is conflicting and contradictory in the extreme. While one author says that colchicum is a specific in both gout and rheumatism, another avers that it is sovereign in gout alone, and that its reputation in rheumatism is ill deserved. Another author considers this remedy efficacious in synovial, but of no service in the fibrous form of rheumatism. One writer extols topical applications in the acute form of these diseases, while another pronounces them fatal. Gout and rheumatism are considered by some authors to be identical in character, while others declare them to be widely dissimilar. Both diseases, however, are frequently associated with what is called the uric or lithic acid diathesis, and when an individual labours under an acute attack of gout or rheumatism, his recovery is generally preceded by a redundant deposit of lithic acid in his urine. Dr. Buckler says:

By what mode this acid is eliminated, or what accident it is which determines its separation, we are unable to say: it stands merely as an isolated fact that by some chemical or vital change taking place, uric acid is separated in great quantity and the individual is relieved. The urine in the course of such an attack may be examined and found as clear as water, and the fluid passed ten or twenty hours after, so loaded with lithic acid as to resemble the washings of a wine cask or beer barrel. From whence is this enormous quantity of lithic acid so suddenly derived? Not from any sudden defect of assimilation occurring in the course of the disease, or from the solids of the body. It is most likely then derived from the blood; but uric acid cannot have existed there in a free state, or it would have been passed from day to day. If then it existed in the blood, it must have been in some state of combination with soda, or lime, or both. And this is the more likely, when we reflect, that the concretions and thickenings

which take place in the fibrous, cartilaginous, and white tissues generally, as before stated, are owing to the deposit in them of soda and lime in variable proportions with lithic acid. Taking into account these two prominent facts above stated, namely, the excess of lithic acid found in the urine at the period of convalescence from an attack of gout or rheumatism, and the subsequent deposit of soda and lime in the white tissues, it occurred to me, that during the existence of these diseases, the lithic acid might exist in the blood in a state of combination with soda and lime in the form of insoluble compounds, which the kidneys and skin refuse to eliminate. If then any agent could be found capable of decomposing the lithates of soda and lime existing in the blood, and of forming in their stead two soluble salts, which would be voided by the kidneys and skin, we should thereby get rid of the excess of fibrin in the blood, the symptomatic fever and the gouty and rheumatic inflammation, wherever seated, which have been excited by the presence of these insoluble salts.

It occurred to me that phosphate of ammonia might be the agent, provided it could be given in doses sufficient to answer the end without producing any unpleasant physiological symptoms. If our theory were true, phosphate of ammonia seemed to be the proper re-agent, for it would form in the place of the insoluble lithate of soda, two soluble salts, the phosphate of soda, which is remarkably soluble, and the lithate of ammonia, which is also soluble, and both capable of being readily passed by the skin and kidneys. The excess of uric acid would thus be got rid of in the form of lithate of ammonia; and the soda, floating in the round of the circulation (instead of being deposited, as it were, like an alluvial formation in the substance of the fibrous and cartilaginous tissues), would be taken up by the phosphoric acid and eliminated from the circulation. Based on this theory I determined to try this salt, and it was not long after that a favorable opportunity presented itself.

[In one case Dr. Buckler prescribed as follows:—"Phosphate of ammonia ℥ss.; distilled water ℥vi.; a table spoonful every four hours," combining it with doses of musk. This was attended with complete relief in thirty-six hours. In another case he prescribed, on November 11th, "Phosph. ammonia ℥j.; water ℥vj.—M. a table spoonful every six hours." On the 18th the patient was well. "In this case the ammonia was the only remedy used." In another case phosphate of ammonia was given with good effect in ten grain doses thrice daily for several weeks.]

I have also used the phosphate in many old hospital cases of chronic rheumatism, that opprobrium of medicine; without a single exception, the patients have declared themselves better, and begged for a continuance of the medicine. The conditions in which it has been administered have not been so accurately noticed that I could report those cases so as to satisfy others. But the impression made upon my own mind is, that it is in these cases the best medicine I have ever employed—for in many of these cases the patient had undergone for years various modes of treatment without benefit—and all were relieved in some degree under the use of this agent, when iodide of potash and other means had failed.

The foregoing carefully-observed and well-drawn up cases, by Drs. Frick and Power, should have their full weight, and induce others to verify his results. In reviewing the cases which I have published, it will be noticed that thickening in the white tissues, of long standing, has disappeared under the continued use of phosphate of ammonia. Now, it is in such cases that the lithic acid diathesis generally prevails, and this agent seems to act here, by depriving the blood for a long time of uric acid and soda, thus creating a demand for those elements in that fluid, and thereby bringing about a re-absorption, as it were, and solution of the superfluous lithate of soda which is deposited in the white tissues. As a result of rheumatism, we sometimes see arthrosis of long standing, where the joints are deformed or dislocated from transformation of tissue, and in gouty subjects

we find calcareous deposits, often crippling the joints and interfering with the free play of the tendons. In such cases, we cannot hope for relief from this, or any other agent; but we may relieve the acute attacks which supervene in these chronic cases, and thus save suffering to the patient, and prevent the further increment of calcareous deposit. I have reported only those cases of acute rheumatism in which the phosphate of ammonia was, for the time being, used as a single agent, believing that these would prove more satisfactory to the reader; but I would not be understood as advocating the exclusive use of this remedy; to do this would be the work of an empiric. The leading remedies should be adopted here, as they are in pneumonia, in which disease the lancet is not dispensed with because antimony is used, notwithstanding the efficacy of this last remedy is universally acknowledged.

In acute rheumatism, the disease is seated in the blood, but then there are painful symptoms related with the alteration of this fluid, such as local pain, heat, and swelling in some part of the body, and increased force in the circulation; anodynes will mitigate the one, and the lancet moderate the other, until the primary indication is fulfilled in restoring the blood to its healthy condition. In the case of a boy aged thirteen, who suffered with acute rheumatism in the shoulder and back of the head, and in whose case there seemed to be some implication of the pneumogastric and glossopharyngeal nerves, there being difficulty in deglutition, great aversion to drinks, and irritable stomach; cups were applied to the back of the head, and the following remedies were given with the most perfect relief. Tinct. digitalis. ʒj.; cyanide potass. gr. iij: hyoscyamus ♈ij; phosph. ammonia ʒij.; water ♈iv. Two teaspoonfuls every three hours.

In the cases reported, it may also be observed, that in every instance in which lithic acid was present in the urine, it at once disappeared under the use of the phosphate of ammonia; and that in all those cases of gout and rheumatism in which, under ordinary circumstances, we might very naturally have looked for a lateritious sediment at the period of convalescence, the urine was remarkably limpid and free from precipitate of any sort. Under both circumstances the lithic acid must have been evolved in the form of soluble lithate of ammonia, the other element of the salt given having united with the soda of the blood, and formed the phosphate of soda, which was also eliminated in a state of solution. From the rapid disappearance of lithic acid from the urine in each case in which this salt was administered, we are led irresistibly to the conclusion, that the phosphate of ammonia must prove the best agent for dissolving uric acid calculus. I have thus far had no opportunity of testing its efficacy in this respect, but we know that the common uric acid deposit is nothing more than a collection of very small crystals, each one of which is a very minute calculus, and that it is nothing but an assemblage of these particles which enters into the composition of the ordinary uric acid stone. When, therefore, these particles are collected into a mass in the pelvis of the kidney, ureter, or bladder, it is only necessary to saturate the fluids of the body with the phosphate of ammonia a sufficient length of time, and the calculus, however large, must be decomposed. When the lithic acid is combined with ammonia, a form of calculus sometimes met with, the phosphate of soda must answer a better purpose, and where the calculus is triple in its composition, the phosphate of ammonia and soda will no doubt be found to answer a better purpose than either of the single salts.

[Dr. Golding Bird does not appear to have noticed this remedy as a means of neutralising lithic acid; but Liebig proposes the use of phosphate of soda for this purpose.]

How is it that the valuable researches of Ancell, Christison, Andral and Gavarret, Prout, Liebig, and lastly, those of Franz Simon, should have furnished so few practical suggestions? For the last five years the medical press has been teeming with articles on the morbid conditions of the urine, *hæmatology* and animal chemistry generally, and yet how very few practi-

cal results, or even hints have grown out of these very numerous investigations and discussions. Those who have devoted their labour to the subject of hæmatology, have given their attention too exclusively to the organic constituents of the blood, and have bestowed less pains in inquiring into the relative proportions of the chemical ingredients of this fluid. We have information, valuable and conclusive, as to the abnormal alterations in the quantity of fibrin, globuline, albumen, but as to the excess or deficiency of soda, lime, magnesia, iron, urea and uric acid in the blood in different pathological conditions, we are not informed.

For example, Andral, in his immortal treatise on the blood, has established the fact beyond the power of contradiction, and contrary to the previous belief of the whole medical world, that in certain forms of anæmia, the fibrin is relatively increased over and above the normal standard. But he does not tell us at the same time, whether the iron contained in the blood is increased or diminished in quantity in this condition. And yet from the fact that the preparations of iron serve more than any other remedies to relieve chlorosis and anæmia, it is very natural for us to suspect that this abnormal condition may result from a deficiency of iron in the blood; this, however, may not be the case, for probably the action of iron in this condition is vital rather than chemical. But still an inquiry into the actual amount of iron would at once establish or refute the assumption.

On the other hand, those who have examined the morbid conditions of urine, have, we think, fallen into an error also in regarding an excess of salt found in this fluid, as a disease in itself, instead of which the presence of any abnormal ingredient ought to be regarded rather as an expression of disease, or an index of the morbid condition of the fluids, or of the system generally. The elements composing a calculus in the pelvis of the kidney are in point of fact just as much without the body as if they were in a basin. It is unphilosophical to suppose that the kidneys can elaborate a salt without having derived the materials of such salt from the blood. And the inquiry is at once suggested, what part has the salt (which may be found evolved by the kidney), or the elements of its composition, played in relation with the other ingredients of the blood from which it has been derived? As, for example, it has been attempted here to prove that the matter of gout and rheumatism is an excess of lithate of soda in the blood, and the action of the phosphate of ammonia in the cases in which it has been tried, goes far to establish the proof. It is reasonable to suppose, then, that the presence of lithate of soda in the blood determines the formation of the excess of fibrin which is found in this disease, and why may not this be the case, whether the conversion of fibrin into albumen, or the reverse, be either a vital or a chemical act? If the conversion of one into the other depends on the laws of life, then the presence of lithic acid or its combinations with other ingredients, is as foreign to the normal constitution of this highly vital fluid, and capable of giving to changes quite as great in the living elements of the blood as we see a sequestrum of any other foreign body produce in the organized tissues which surround it. And if on the contrary, the conversion of albumen into fibrin is accomplished through chemical agency, still the lithate of soda may play a part in bringing about this change, analogous to that which is effected by various agents, when brought in relation with different organized matters; as in the conversion of oil into a material resembling spermaceti, or the influence of a single drop of oxalic acid in changing a large quantity of thick syrup into a thin saccharine fluid. So that whether the agency of urate of soda is purely vital, or chemical, or partly both, its presence in the blood may play a part in relation to the other elements of this fluid, resembling that which the sequestrum is seen to do in the one case, and the drop of oxalic acid in the other. And thus each chemical ingredient of the blood, from its excess or deficiency, or by forming new compounds in different diseases, may, through vital or chemical agency (as before explained) modify the quantity or consistency of the organic elements of the vital fluid. But again,

through vital or chemical agency, the fibrin and albumen are mutually convertible into one another, each in its turn retaining its proper vital integrity and primary chemical composition, as to the due proportions of oxygen, nitrogen, carbon and hydrogen, which enter into its formation. Now an excess or deficiency of some chemical ingredient of the blood may so modify this process as to cause an abnormal formation to take place. This new formation may only differ from fibrin in some slight alteration in the proportion of its ultimate elements and its unfitness for the purposes of the economy in health. But farther, the fibrin in this abnormal condition may, for aught we know, constitute the matter of tubercle, which wafted in the rounds of the circulation, may be arrested in any of the tissues of the body, and there becoming endowed with new vital properties, take the form of gray semi-transparent particles which are first recognised by the aid of the microscope. And so an abnormal matter, similar in its mode of formation, but differing again as to its ultimate composition, may lay the foundation of the disease of Bright. It may be said by some that the physical appearance of these deposits is so very different from anything met with in the blood that such an idea is absurd. But it may be said, on the other hand, that honey is very different in its physical properties from wax, and so is oil from spermaceti, and yet, chemically, they are so very similar that it is extremely difficult to point out any real difference.

Indeed, any one at all familiar with organic chemistry, is only too well aware, in making an analysis, of the trivial accidents which often intervene in similar processes, to bring about different results: and he can readily see how an excess or deficiency of any one of the chemical ingredients of the blood may modify the organic elements of that fluid, and thereby convert them into materials for diseases of the solids.

*American Jour. of Med. Science, Jan.*, 1846, *p.* 110.

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83.—GOUT.—By W. H. Robertson, M.D., &c.

[On what is often called gouty neuralgia, Dr. Robertson says:]

The sheath of the nerves is not an unusual seat of irregular gout, forming what is called gouty neuralgia. This is generally a severe and intractable complaint. It is probably the worst and most obstinate form of neuralgia, that does not depend upon organic changes, and is not therefore incurable. The history of the case—the individual having suffered from gout, or being predisposed to it, or having led such a life as to lead to the inference that the predisposition may have been induced—especially if strengthened by the presence of some symptoms of irregular gout, would serve fully to diagnose a case of this kind. The best and most speedy cure of this affection is to be found in a fit of regular gout. It may exist, in despite of all treatment, for years. It may have little effect on the general health; or it may derange it essentially, and superinduce serious or fatal disease—most usually, as it has seemed, of the heart. Like all the other forms of irregular gout, it is, in most cases, traceable to the suppression, or retrocession, or imperfect development of the disease, and is very generally mixed up with general debility. The sciatic nerve is by far the most common seat of this form of gout; and sciatic gout is the name by which it is most commonly distinguished; but occasionally, although very much more rarely, the nerves of the face or of the upper extremity, are affected by it. That it is essentially gouty in its nature, is perhaps sufficiently proved by its history, its irregularly paroxysmal character, its origin in the gouty system, and more or less directly from imperfectly developed gout, and by the immediate relief obtained by a developed fit of gout. In general, this form of neuralgia is less influenced by change of weather than ordinary neuralgia; but there are too many exceptions to this, to make it of decided value as a means of diagnosis. *If not the* most immediately alarming form of gout, it is very tedious,

uncertain, and difficult of management, and one that often exhausts the patience of the sufferer, if not of his medical attendant. A thorough change of habits, mode of life, place, kind of air and scene, is almost always indispensable to any hopeful treatment of this affection; and the occurrence of gout in some other tissue is what is to be most wished for.

[We suspect that many of these cases of sciatica are owing to affections of the kidneys, causing irritation along the course of the sciatic nerve. We generally find depositions of the different salts in the urine, and that the case is generally relieved by a course of liquor potassæ, and spare or temperate diet, avoiding all acids. A case mentioned by the reviewer, of gouty neuralgia of the intestine, may have been owing to similar cause: it is related as follows:]

A gentleman, sixty years of age or thereabouts, and who, twenty or thirty years before, had suffered for a length of time with that form of bronchial irritation to which we alluded in a preceding page, had, at intervals of various duration, an attack of severe pain in the left iliac region; this part became exceedingly tender on pressure, so that it was generally deemed advisable to leech and foment the part, as well as to administer antiphlogistic medicines to keep down the febrile irritation that was present. The attack usually lasted for three or four days: but a certain degree of tenderness remained in the groin for several days longer. Several medical men had visited him, and more than one suspected that there was incipient organic mischief forming in the descending portion of the colon. If so, how came it to pass that the attacks were, irregularly, periodic, and that, in the intervals between them, the patient was quite exempt from all uneasiness? Upon the urine being tested in one of these intervals, it was found to be decidedly more acid than in health: and, coupling this fact with the circumstance that the patient had, at a former period of life, suffered from a gouty complaint, we deemed it advisable to put him upon a course of alkaline medicines, and prohibit the use of all vinous and malt liquors. The result was most gratifying. For the next twelve months he remained almost entirely exempt from a return of the abdominal attacks.

[Now the treatment here adopted would be more likely to relieve a lithic acid affection, and consequently to diminish irritation along the ureter than an intestinal affection. On the diagnosis between gout and rheumatism, especially between the chronic forms, Dr. Robertson is not very clear, and although no one can reasonably deny that there is a difference, yet, he has not assisted us in discovering what it essentially is.

The remarks of the reviewer on the treatment of what is called rheumatic gout, are so good that we cannot help quoting them at large, remarking that they tend to corroborate the view we have just ventured to give respecting the sympathetic nervous actions which disordered kidneys are disposed to produce. The reviewer says:]

After the most mature consideration of this subject—based not only upon what has been written by the most experienced authors, but also upon the results of minute observation in practice—we have long since come to the conclusion that genuine uncomplicated rheumatism, whether it be of the acute or chronic form, is always connected with an excess or redundancy of the fibrinous constituent of the blood. Many circumstances seem to favour this idea. The disease very generally occurs in persons of a plethoric habit of body, and who are liable to inflammatory disorders, either from a congenital predisposition, or from an excessive consumption of strong and nutritious food. The state of the blood, too, when drawn, very generally shows that there is a redundancy of fibrine; and when any serous surface becomes the seat of the rheumatic inflammation, it is well known that there is almost invariably an effusion of coagulable lymph. Moreover, what is the medicine which of all others appears to have the most prompt and decided effect, not only in causing the absorption of the lymph that has been already effused, but also in defibrinating (so to speak) the condition

of the blood? Is it not mercury? And is not this the very remedy on which we can best depend for the relief of many of the most serious and distressing symptoms of rheumatism? If the system once becomes gently mercurialised, not only do the present sufferings of the patient almost immediately subside, but the existence of any internal mischief is generally counteracted and subdued.

In saying this, however, we do not wish it to be understood that the treatment of rheumatism should be left entirely to the exhibition of mercury. Moderate venesection may be, and very often is, unquestionably useful; it controls excessive febrile action, and at the same time powerfully promotes the curative operation of other remedies. Then, again, the secretion of the kidneys is almost always very sensibly deranged; usually it is sparing in quantity, and also highly charged with its peculiar principles, which, if not duly eliminated from the system, invariably aggravate all pyrexial irritation.

Whatever may be said of the theory we advocate, we can vouch for the very general success which will attend the practice that is based upon and derived from it: viz., the use of a mild course of mercurial alteratives, and of saline, and especially alkaline, diuretics; the occasional moderate detraction of blood, either generally or locally; a light and lowly animalised diet; and a most rigid abstinence from all fermented liquors, more especially from those which contain much glutinous and nutritious principles, such as porter and ale. We have almost daily occasion to witness the good effects of entirely prohibiting all such stimulating drinks in chronic rheumatic ailments, and we are not unfrequently surprised to find that many medical men seem to neglect so much the regulation of their patients' diet, while cramming them with physic—the very virtues of which are often directly counteracted by the pernicious ingesta, that are allowed to be taken at the same time. We need scarcely to say that warm clothing is another essential adjuvant in the treatment of all cases of rheumatism. Its use is the more necessary, when we administer mercury and diuretics; as the action of those remedies invariably renders the cutaneous surface more sensitive to atmospheric impressions than it was before.

If the view which we have now taken of rheumatism be correct, it is sufficiently obvious that the morbid condition of the blood, upon which it is believed to depend, may be associated with a cotemporaneous dyscrasis of the circulating fluid of a different nature. Along with the excess of fibrine there may be, for example, the presence of an abnormal acid matter, such as we have every reason to believe exists in genuine and uncomplicated gout. If such be the case, may we not reasonably suppose that the phenomena, to which this compound morbid state may give rise, will have a compound character, partly rheumatic and partly gouty? Such is the view that we take of what is called "rheumatic gout"—a malady, we feel assured, that is of very common occurrence, in spite of the repeated contradiction of our author.

[In the treatment of gouty inflammation, Dr. Robertson does not advise the application of leeches, but the reviewer is of opinion that a gentle oozing from a few leech bites, kept up by warm fomentations, is decidedly beneficial; the part should be kept covered, and the day following a tepid spirit lotion applied. Sir C. Scudamore recommended one part of spirit to three of camphor mixture; the reviewer adds that the addition of a little vinegar will often be found grateful. Dr. Robertson considers colchicum as a narcotic as well as an evacuant. The reviewer remarks that:]

The primary effects of the medicine seem to be exerted upon the mucous surface of the stomach and bowels, stimulating their secretions, and powerfully affecting their nerves (in a manner, there is reason to believe, similar to that of veratria upon the skin); its secondary, are directed more immediately upon the kidneys, exciting them to a more active elimination of *lithic* acid, and probably, too, of other nitrogenised elements, from the sys-

tem. The action of the remedy is therefore two-fold; first on those organs engaged in what Dr. Prout has called the process of primary assimilation, and afterwards on some engaged in the process of secondary assimilation. According to this view, colchicum ought to be very useful in many other maladies besides gout and rheumatism; and so it unquestionably is. We have found it often produce excellent effects in various cerebral and hepatic disorders, more especially when these occur in full and plethoric habits. In the early stage of acute hydrocephalus, it may be given with great advantage; and, in short, in almost every disease, in which we wish to make a strong impression on the intestinal canal and on the kidneys. As a general remark, it may be well to state that, whenever we have reason to suspect that the bowels are loaded or the intestinal secretions much depraved, the use of colchicum should always be preceded by some active purgatives in combination with a mercurial.

This is just what might have been anticipated, considering the modus operandi of the drug. By its peculiar influence on the intestinal surface, it acts as a powerful derivative of the distal irritation that is present in the hands or feet; and, if this revulsion takes place before the bowels have been cleared of their offensive contents, the morbid action may fasten itself upon some vital organ, and give rise to the most alarming symptoms. Whoever has tried upon his skin the effects of veratria (and the veratrum belongs to the same natural family as the colchicum), will remember the peculiar effects which it has upon the cutaneous nerves; and the continued tingling irritation which it produces, has, it is well known, often relieved the most painful neuralgia—although there has been no narcotic nor directly sedative operation experienced, as when the active principle of aconite, and such like plants, has been used. Now, is it not possible that colchicum may act in a somewhat similar manner upon the nerves of the alimentary canal? and, if it does, can we be surprised at the pernicious effects which it may occasion, while the materies morbi is yet uneliminated from the system.

The too common practice of calling colchicum a specific for gout has given rise to the most unscientific, and unfortunately, too, the most pernicious errors. Its use may relieve pain, and it may powerfully assist in promoting the expulsion from the body of the peccant matter that is invariably present to a greater or less extent; but it will never by itself serve to prevent the new formation of this matter, nor can it even cure some of the worst sufferings to which gouty patients are liable. We cannot, therefore, go so far as Dr. Robertson, and admit with him that "so much power has this wonderful drug on gouty action, that it enables us, in a very great degree, to prevent, relieve, or modify its manifestation." Fortunately, the use of this potent remedy is not necessary in a vast number of cases of chronic gout. The exhibition, continued for some time, of mild alkalies, and the regulation of the diet, so as to prevent as much as possible the formation of acid during the process of digestion, with due attention to the state of the alvine excretions, will do more for the effectual and permanent relief of our patient, than the use of colchicum, or of any boasted specific in the world.

The great diminution, in point of frequency, of gout during the last thirty years in this country, is obviously attributable to the much greater temperance in the vinous liquors that has prevailed since the close of the last war. Men now-a-days eat quite as much as they ever did, and are, we verily believe, quite as plethoric as they used to be; but they certainly do not ingurgitate so much port wine—the true "fons et origo" of a vast deal of gouty disease. Persons, who have a tendency to the malady, and who yet have not the control over their appetites to resist the use of vinous and malt liquors, should be instructed to take a scruple of carbonate of soda or a little calcined magnesia about two hours after their dinner: this will serve to neutralize the acidity that is developed during the process of digestion.

Sir H. Halford was much in the habit of prescribing a rhubarb and soda pill, forenoon and evening, to his gouty patients: the practice is a very good one. The stomachic remedy well known as Gregory's powder—consisting of rhubarb, magnesia, and ginger—is also very serviceable, if taken an hour or two after meals. It should ever be remembered, that the foundation of rational treatment of the gouty diathesis must be the correction of the disordered assimilative functions, and the neutralization of the peccant acid matter already introduced into the system;—the intestinal and renal excretions having been first brought into a healthy state. The fountain-head of the evil is in the chylopoietic viscera: if the spring be troubled, how shall the streams be pure? To ascertain this cardinal point, the condition of the alvine and urinary evacuations must be known; such knowledge is as necessary for the judicious treatment of gout, as that furnished by the auscultatory exploration of the chest is for the treatment of dyspnœa or acute rheumatism. Unless the physician makes himself, every now and then, acquainted with the chemical properties of the urine, his practice must be empirical, and may be often most injurious.

*Medico-Chirurgical Review, Jan.* 1846, *p.* 88.

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84.—TREATMENT OF ACUTE RHEUMATISM.—By Dr. Griffin.

Dr. Griffin points out the success attendant on the administration of large doses of opium, in inflammatory affections, both of mucous and serous membranes, and also of the fibrous tissues. The error, he considers, particularly in the treatment of inflammation of mucous membranes, to consist in giving too small a quantity for a dose, by which the secretion from the inflamed surface (nature's relief of the disease) is checked, without the inflammation being subdued. He contrasts the effects of opium in the treatment of acute rheumatism, with other remedies, which are particularly relied on; as bleeding, colchicum, emetic-tartar, &c., and considers that opium generally is most effectual; and there is less danger of relapse, or what is worse, of metastasis under its employment. When it produces systematic disturbance, Dr. Griffin combines it with calomel, and makes use of moderate bleeding, and recommends this combination where the fibro-serous membranes are implicated. We extract the following from the Medico-Chirurgical Review for January, 1846, where Dr. Griffin's treatment is brought under consideration.]

*How should Acute Rheumatism be treated.*—In passing the various modes of treatment under review, Dr. Griffin observes that free depletion, from a mistaken supposition of the identity of the disease with ordinary inflammation, is discountenanced more and more as our experience of the disease increases. "It will indeed appear that the average period occupied in the cure by it is longer, the success more doubtful, the pain more considerable, the danger of metastasis and of relapse greater, and the convalescence more tedious, on comparing it with other methods to which we shall presently advert.

Colchicum, aided by moderate depletion and antiphlogistic regimen, is generally successful. Dr. Griffin has occasionally found, as well as Dr. Hope, obstinate and even dangerous diarrhœa attend its use, and by no means considers either the most certain or most safe remedy. Tartar-emetic has been given by Dr. Griffin in even larger doses than Laennec and Louis employed, viz., a grain every hour for many consecutive hours. The first dose or two were usually vomited, but if tolerance then ensued the cure was often astonishingly quick, in cases even of many days' prior duration. Diarrhœa sometimes occurred, but it was generally easily arrested. It failed in its effects, however, in more than two-thirds of the cases. "On the whole it appears evident, that while the emetic tartar administered in large doses occasionally displays a singular and extraordinary control over

acute rheumatism, we are yet at a loss to determine in what cases it is more particularly successful, or how its influence can be more extensively applied."

The author next adverts to the modes of treatment employed by Drs. Corrigan and Hope as far superior, as regards their certainty, the time occupied, and the freedom from metastasis or relapse, to any others. In all these advantages the one is little superior to the other; but in some cases the one, and in some cases the other plan may be most advantageously adopted, while in a third category the two modes may have to replace each other. Dr. Corrigan's treatment consists in the administration of one or two grains of opium every second or third hour, or of ten, twelve, or more grains in the twenty-four hours. He dwells upon the importance of the dose being thus sufficient and full, a less quantity given seldomer, only producing the stimulant and injurious effect of the drug. "The opium should always be increased in dose, both as to frequency and quantity, until the patient feels decided relief; and should be then kept up at that dose until the complaint is steadily declining. The first indication that tells the practitioner that he has reached the proper dose, is the statement of the patient, who, in reply to an inquiry as to how he has passed the night, probably says that he has not slept, but that he is free from pain, and feels comfortable. This effect having been attained, the opium may then be continued in repetitions of the same dose as to frequency and quantity."—*Corrigan.*

Dr. Griffin has, however, found in some cases stupor, headache, and constipation (although in many others the bowels continued quite regular), obliging him to have recourse to Dr. Hope's plan. This consists in the administration (after one or two bleedings in the robust only), of gr. v ad x hyd. sub. with 1½ and (or?) 2 gr. opium every night, and a purgative, which will act four or five times at least, every morning. The following draught, given three times a-day, expedites the cure. ℞. Vin. Colch. mx-xx. Pulv. Ipec. co. gr. v. M. Salin 3x. Syr. 3j. M. when the pain and swelling are much abated, which usually happens within two, and almost always within four days, and before this, if any tenderness of the gums occurs, the calomel is omitted, continuing one grain of opium at bed-time, and in some cases at noon, as also the colchicum draught, and morning senna purge. Dr. Griffin observes that, where a sore mouth supervenes, the cure will have to be completed by the opium plan; or, if there is not much pain left, by quinine and potass. hydr. "Salivation can never occur in these cases, any more than in abdominal inflammation, or in cholera, unless the use of calomel be persevered in after the symptoms have completely given way, and a cure in part effected. So long as acute disease lasts, mercury will not salivate, but a single dose given after the disease has given way may do so, and the difficulty of avoiding it generally arises from the influence of our own apprehensions, which tempts us to continue the remedy beyond the absolute necessity, for fear of a relapse. Disease of the heart is rare under either of these modes of treatment; but when discovered, large and repeated doses of calomel and opium are essential. When the rheumatism threatens a chronic form, or the attendant fever assumes a hectic character, quinine or the hydriodate of potass in full doses are of great use.

*Medico-Chirurgical Review, Jan.* 1846, *p.* 60.

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85.—ON THE USE OF COD-LIVER OIL IN CHRONIC RHEUMATISM.—By Dr. BRADSHAW.

[In the Retrospective Address on Medicine, delivered at Northampton, in 1844, by Dr. Cowan, there is especial mention of the therapeutic employment of this substance. It appears to be particularly useful in all cases characterised by deficient action—as "phthisis, chronic rheumatism, rickets, &c."

It augments animal heat by supplying carbon to the system, and it also increases the coloured globules of the blood; it is easy of digestion, and unlike other oils, does not cause diarrhœa. Dr. Bradshaw has used cod-liver oil with success in the treatment of chronic rheumatism. One of his patients had been in the Indian army, and exposed to great hardships; at the battle of Seringapatam he was obliged to stand up to the middle in water for many hours, and from that day, he had never had the perfect use of his limbs, and was racked with agonising pain, which he allayed with small doses of crude opium, which he swallowed from time to time, without which life would have been insupportable. Dr. Bradshaw observes:]

I suggested to him the use of train oil, to which he readily assented, declaring that anything was better to him, however obnoxous to the palate, than the constant pain he had endured. Knowing that some of the Russians made choice of the blubber portion of oil, I deemed it advisable to administer it in this form, and began with a tea-spoonful three times a-day on a little water. The distress, however, occasioned to the stomach by constant vomiting, caused me to desist and procure for him the clear oil, which may be drawn from the upper part of the cask. This I administered on a little gin, and augmented the dose daily until he was able to take the half of a wine-glassful morning and night.

The improvement in this patient was daily remarkable: his countenance assumed gradually a cheerful aspect; he rapidly gained flesh; his bowels, which had heretofore been costive and troublesome, acted daily; his sleep was refreshing; he threw aside one staff, and then the other; his physical energies by degrees returned to him, and I had the pleasure of seeing him six months afterwards with his gloves and mattock trimming the hedges of a neighbouring farmer, with the full sweep of vigorous manhood.

[Another case in which Dr. Bradshaw used this remedy, was an old midwife, seventy-one years of age, of thin spare habit, and costive bowels; with ardor urinæ. She had been subject to rheumatism forty years, and had taken sedatives for some time to allay her pain. Dr. B. adds:]

The formidable nature of the case, however, urged me on, and with the patient's consent I gave the tea-spoonful of oil as in the former cases, three times a-day, increasing the dose until she could bear a full wine-glass; but it is remarkable that the stomach revolted if the dose was given on any vehicle but that of strong whisky. The daily improvement here was equal to anything I had ever seen; she certainly appeared to grow younger; the constipation of the bowels subsided; the ardor urinæ was no longer troublesome, and this woman spent many years afterwards in the glories of longevity, attributing her happiness to the effects of the oil.

[Although many cases of chronic rheumatism may be cured or relieved by the use of cod-liver oil, yet it should not be given in those cases where dyspeptic symptoms co-exist, since, in these cases, the alimentary disturbance often arises from the admixture of fatty matters with the contents of the canal; but where it is admissible, its use should be daily kept up for a month at least. Dr. Bradshaw remarks:]

I have been in the habit of administering the remedy in various vehicles, as circumstances required, or the condition of the patient demanded, such as cinnamon and peppermint waters, thin gruel, milk, and the alcoholic potions mentioned in the former part of these notes, but I give the preference to a thin infusion of linseed, flavoured with lemon peel, and sweetened to please the palate. My mode of giving the oil with this is in form as follows:—I pour a small quantity of infusion into a glass, on which is added the oil, and again another small quantity of infusion upon it. In this manner the dose may be swallowed, and will slip down without offending the palate, and generally is well retained even by irritable stomachs. Another mode has been successful when many have failed, and will be found equally valuable: it is the yolk of an egg beat up with boiling water and sugar, with which may be mixed a dessert-spoonful of brandy, and on

this the dose may be given without producing that nausea so frequently experienced when conveyed by other vehicles.

*Provincial Med. and Sur. Jour., Dec.* 31, 1845, *p.* 753.

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86.—ON THE MODUS OPERANDI OF COLCHICUM IN RHEUMATISM.—By Dr. C. J. B. Williams, F.R.S., &c.

[In the treatment of rheumatism, colchicum is to be generally relied upon, but should many joints be affected, and the fever and inflammation run very high, then bloodletting and mercurial purgatives must be superadded. When the pain is of a nervous character, then opium or morphia are useful. Dr. Williams does not consider that colchicum cures rheumatism by acting as a purgative, but that it operates chiefly by assisting the kidneys in the elimination of morbid matter. He says,] .

I have no doubt that it acts chiefly in promoting the elimination of excrementitious matter through the kidneys. You have had several opportunities of observing that as the patient got better, the urine increased, either in quantity or specific gravity, or in both. Sometimes there has been a copious deposit of lateritious sediment, and this is the most favourable case: but it is not essential; for in other instances the excrementitious matter is eliminated in the form of dissolved urea, and then there is no deposit. This, I believe, is the true mode in which colchicum cures rheumatism and gout; and this explains why it acts most favourably when it does not disorder the bowels.

[After the pain and inflammation have subsided, Dr. Williams directs the continuance of the colchicum for a week or ten days, to get rid of the rheumatic matter from the system. He combines it with a mild tonic; afterwards he substitutes iodide of potassium, and improves the patient's diet.] *Med. Gaz., Dec.* 26, 1845, *p.* 1487.

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87.—ON THE NATURE AND TREATMENT OF CANCER.—By W. H. Walshe, M.D., &c., &c.

[In the British and Foreign Medical Review, for January, 1846, is a notice of Dr. Walshe's work on the Nature and Treatment of Cancer. Dr. Walshe considers this disease no longer as a local external surgical malady, but as a true constitutional disease, of which the local manifestation is a small, and often unimportant feature. Dr. W. puts the diagnosis of the disease, when it affects internal organs, in a much clearer light than heretofore. The reviewer observes, that the strongest proof of the constitutional nature of cancer, is the fact established by Dr. Walshe, that the knife should only be had recourse to in the extirpation of the local affection, in a very small proportion of cases. Dr. Walshe commences stating his views on the nature and progress of cancer, by saying,]

I had scarcely commenced the study of adventitious products, before I became convinced that much of the obscurity pervading the subject arose less from its nature, than the erroneous manner in which its investigation had been conducted. I found observers had overlooked the fact, that the higher orders of these products were real existences developed within existences, and possessed of two distinct modes of life: a life, subject to its variations of health and disease, irrespective of the organism in which they had taken birth; and a life influenced by the conditions of the various structures and functions of that organism. I saw that phenomena, accessory and contingent, were confounded with others necessary and essential; and that, as a natural consequence, misapprehension of many pathological relations had followed. Desirous of removing this source of unsound doctrine, as it affects the most important of adventitious growths, cancer, I

have separately considered (on the plan habitually employed in my lectures) the healthy and diseased conditions of vitality of that product.

The following is the view which I conceive may be taken of the nature and sequence of the phenomena of the disease. A certain constitutional state exists, and may continue to exist for a variable period without giving functional evidence of its presence, although the blood and solids of the body are specially modified. In consequence of local injury, or otherwise, exudation takes place; upon that exudation the constitutional state has impressed special attributes and tendencies; among these attributes ranks an intrinsic power of vegetation. This vegetating faculty of the exudation reacts on the system by constantly draining it of a portion of its nutrient materials—the progeny feeds upon the parent organism, and the first phases of evolution is accomplished. But the natural tissues have been so modified in properties by the constitutional state, that they are incapable of resisting the encroachments of the vegetating exudation, and hence become the seat of atrophous, ulcerative, and other modes of destruction. Discharges of various kinds now still further drain the system of its fluids, and impair its vital energies; and the second phasis is established. Meanwhile, secondary alteration of the blood is effected; this fluid becomes the vehicle for the circulation through the system of elements possessed of a germinating force —these stagnate, are deposited, and new local vegetations spring into life and activity. The same series of phenomena is again and again gone through; until the system, drained of its reparative fluids in feeding exudations and supplying discharges, exhausted of almost every drop of pure blood through the influence of secondary cancerous impregnation, paralysed in its nervous energies by physical anguish and deficiency of pabulum, sinks in the struggle against the superior powers of the new existence it has created —and in death is closed the third phasis of the disease.

*Of Compression in the Treatment of Cancer, more especially by means of Dr. Arnott's Apparatus.*—In the year 1809, Mr. Samuel Young conceived and acted upon the idea that the continued nutrition of schirrous tumours might be completely prevented, and the absorption of existing substance insured, by submitting them to methodic compression. The results of the practice, as made public by himself, have been condensed as follows, by Dr. A. L. J. Bayle. The number of cases given is nineteen; of these, seventeen relate to cancer of the breast, two to ulcers of the cheek and upper lip. Twelve cases terminated by cure; five were considerably benefitted; the two cutaneous ulcers improved somewhat. The majority of the tumours were hard, irregular, tuberculated, and the seat of lancinating pain; six of them were ulcerated, and discharged ichorous pus. Even in the worst cases the tumour diminished in size, but the patients fell victims to the diathesis.

In consequence of Mr. Young's announcements, the plan was tried at the Middlesex Hospital, and a committee appointed to report upon the results. The conclusion of the report, drawn up by Sir Charles Bell, was, that compression could not be regarded as a "specific cure, and had no claims to notice, except for its power of alleviating pain." But, as was justly rejoined by Mr. Young, much of the want of success described may have arisen from defective management of the plan; no details of the cases are given. The spirit in which Sir Charles Bell judged, may be inferred from the allusion to the mode of treatment as a specific; a character with which Mr. Young never sought, in the remotest degree to invest it; it would, in truth, be just as wise, observes the latter, to speak of the pad of a hernial truss as a specific against strangulation, as to assign the character to compression in cancer.

The testimony of Mr. Travers is favourable to the practice. He has known tumours, such as those already described, "gradually reduced, and at length absorbed by equal and persevering compression, as by strips of soap and adhesive plaster, or, what is better, by an elastic roller passed many times round the chest, with layers of the amadou smoothly inter-

posed between the turns of the roller." M. Recamier has employed compression upon a very large scale, and the more important part of his results is as follows:—"Of one hundred cancerous patients, sixteen appeared to be incurable, and underwent only a palliative treatment; thirty were completely cured by compression alone, and twenty-one derived considerable benefit from it; fifteen were radically cured by extirpation alone, or chiefly by extirpation and pressure combined, and six by compression and cauterization; in the twelve remaining cases the disease resisted all the means employed. M. M. Blizard and Masson have published three cases, and M. Carron du Villards three others—in all of which irregular nodular scirrhi, the seats of lancinating pain, &c., were removed by compression. Dr. A. L. J. Bayle gives, as the general results in 127 recorded cases, 71 cures, 26 instances of improvement, 30 of total failure. These results, the most favourable on the whole that can be adduced in favour of any mode of treatment, bear scrutiny of the severest kind. It is no doubt true, that, in some of the cases alledged to be cancerous, neither of the anatomical species of that affection existed; but it is on the other hand perfectly unquestionable that many of the absorbed growths were not only actually scirrhous, but had already become the seat of ulceration, when submitted to compression.

Difference of opinion has existed as to the best mode of applying compression. M. Recamier employs perfectly smooth disks of agaric, laid over each other, and retained in situ by a roller, as the compressing materials.

M. Begin sometimes substitutes a laminated plate of lead, modelled to the tumour, and surmounted with a pyramid of graduated compresses. This application (which is far from a novel one) frequently becomes painful, and cannot be endured. M. B. recommends a renewal of the apparatus every day, or every second day. M. Begin thinks it better to change only when the bandages grow loose; and prefers, in consequence of this view, an elastic corset, capable of accommodating itself to the decreasing size of the part, as the compressing agent, wherever circumstances admit of its use. But all contrivances of these kinds are ineffectual, for various reasons: in the first place, they exercise unequal and irregular pressure on the tumour; in the second, they confine the movements of the chest to a degree varying with the amount of constriction; in the third, the force employed is not directed against the diseased mass alone, but wasted in great measure upon the healthy parts; and, in the fourth, while the difficulty of applying the apparatus effectually is extreme, it invariably loosens and becomes more or less disarranged within a short period after its application. Besides all this, the least unevenness in the material lying next the diseased structures renders the compression unbearable, from the pain it produces. These are the chief reasons, doubtless, which have hitherto prevented compression from taking its ground as a general system of treatment of various external cancers.

*Dr. Arnott's plan.*—The fertile ingenuity of Dr. Neil Arnott (already so successfuly and so variously employed in devising mechanical means of relieving human suffering) has triumphed over these difficulties. Dr. Arnott has invented a method of applying compression, which, while it is free from all the objections mentioned, is philosophical in principle, and possessed of peculiar practical excellencies. His apparatus consists of a spring, an air-cushion supported by a flat resisting frame or shield, a pad, and two belts. The spring, which is of steel, is the compressing agent—its strength being varied with the amount of pressure it may be desirable to obtain. The shield varying in shape somewhat with the circumstances of particular cases, is generally slightly convex on the external surface, of circular or oval outline, and formed of a rim of strong wire, connected at two opposite points by a flat piece of iron, which serves for the support of the spring, screws, &c., the whole being covered with jean. To the rim of this shield is sewn a sort of conical cap of soft linen, designed to receive the air-cush-

ion, to keep it constantly slack, and prevent it from slipping about when applied. The air-cushion thus kept slack fashioned into a sort of double night-cap, lying in apposition with the inner surface of the shield, and sufficiently filled with air to prevent the latter from pressing directly on the part, and receives within it the tumour to be compressed. One end of the spring is attached by screws to the external surface of the frame, and the other end to a solid but soft pad, placed wherever the counter-pressure is to be made. The straps are used to keep the apparatus steadily fixed. Let us suppose that the breast is the region to which the instrument is to be applied; the position of its various parts will appear as they are represented in the figures. The spring may either be passed over the shoulder or round the waist; the latter mode of application suits best, when the tumour is seated towards the external border of the breast, and inclined to slip towards the axilla.

The mechanical advantages of this mode of compression are, that the movements of the thorax are not interfered with; that the amount of pressure may be regulated to a nicety; that the whole morbid mass undergoes constant, equable, and uniform pressure; that the part is protected from external injury (a point of serious importance); and that, unless in a very few exceptional cases, the apparatus may (either with the shoulder or waist-spring) be very easily arranged. It is necessary that the amount of pressure should be low at first (say 2lbs.), especially in the case of nervous, irritable people—in fact, that the instrument should rather supply a support for, than exercise pressure on, the part; that the entire morbid structure (as well as any connected loose soft parts, which might be injured by accidental pressure of the rim of the shield), should be included within the cushion; and that in all cases there be a distant thickness of air-cushion between the shield and the skin.

The effects produced by pressure are removal of existing adhesions, total cessation of pain, disappearance of swelling in the communicating lymphatic glands, gradual reduction of bulky masses to small, hard, flat patches or rounded nodules (which appear to be, both locally and generally, perfectly innocuous), and in the most favourable cases total removal of the morbid production. The relief of pain afforded by the instrument is, without exaggeration, almost marvellous; this effect is insured by the peculiar softness and other properties of the air-cushion, the medium through which the pressure of the skin is transmitted to the surface. Females unable to obtain sleep even from enormous doses of laudanum, cease instantaneously to suffer on its application; and sleep thenceforth, as though they were perfectly free from the disease.

There are certain conditions which either interfere altogether with the use of the instrument, or reduce it to a merely palliative agent. These conditions are, more particularly, excessive bulk of the new growth, and such localization of this structure as place any portion of it beyond the reach of pressure. Persons of irritable skin and temperament, and prone to become œdematous or anasarcous, are with some difficulty manageable. Less is to be expected in cases of encephaloid cancer than of the other species, and in cases of infiltrated than of tuberous accumulation. If the morbid mass be extensively softened, ulcerated, or in a state of fungous vegetation, palliation is all that can be fairly hoped for. Adhesion to the skin is of untoward influence. As a means of controlling and averting hæmorrhage, the slack air-cushion pressure is of high utility.

Pressure, on Dr. Arnott's system, is applicable to cancerous tumours in every situation where a bony or other solid support exists behind the growth, and where a point for counter-pressure can be had. The mamma, the limbs, the surface of the thorax or cranium generally, are the seats in which the mode of treatment is most readily applicable. I see no reason why cancer of the testicle might not be treated thus; and gentle pressure on this plan deserves a trial in certain cases of cancer of internal parts (it would surely relieve

pain), provided the general functional relations of those parts do not interfere (and they will often not do so) with the adoption of such pressure.

The system of the pressure now described, useful as it is independently of all other treatment, may be rendered more efficacious by the association of other external means and internal remedies. The following case exemplifies the power of such combinations:

*Case of Cancer, by Dr. Walshe.*—I was requested (March 3d, 1843) by Mr. Langley, to see a lady affected with scirrhus of the breast, which it was proposed to remove with the knife. Exactly five months and a half ago was attracted by slight pain to the right breast, and found there a lump about the size of a small hazel-nut, not tender to the touch, unattended with soreness or discoloration of the skin; it increased but a little in size till the last six weeks, within which time it has enlarged to its present bulk; suffers scarcely any pain in the tumour itself, but has lancinating pain above the nipple in the indurated part of the gland to be presently described. In its general outline the right breast is double as large as the left (it has always been somewhat the fuller of the two); the subcutaneous veins more visible than on the opposite side; at the axillary border of the gland is an excessively hard, solid, defined, rather moveable tumour; the finger may almost be slipped behind this, but at its inner edge it is continuous with another indurated mass, obviously a portion of the mammary gland itself in a state of infiltration; the tumour is finely knotted on the surface, the infiltrated part somewhat more largely so; besides this, the substance of the gland is indurated and knotty, especially above the nipple; the nipple is less prominent than on the healthy side, but is not actually drawn in; the areola is unaffected; there are no adhesions of the skin or alterations of its texture; no enlarged glands in the axilla, but slight thickening and hardening of some of the absorbent vessels leading thither; no discharge of blood even from the nipple; when the tumour was examined, not painful, but a short while after became so. Measurements: whole breast, four and three quarter inches broad; three and a quarter inches vertically; tumour one and three quarters inches broad, one and a half inches vertically. The soft parts about are flaccid and yielding. I recommend the following pill: ℞. Arsenici ioduret. gr. j.; extract. conii ʒij. in pill xvj. dividend. j. bis die s. Light nutricious diet; moderate walking exercise. March 8. Applied the slack air-cushion (diameter of bag six and a quarter inches, pressure of spring three and a quarter pounds): the whole mass of the breast included, except about half an inch at the left superior angle, where merely cellular tissue. No annoyance of any kind experienced by the patient, except slight impediment to respiration, which ceased in a few minutes. March 10. Pain totally removed; size of general mass of breast somewhat diminished, but the tumour is only rendered more prominent and apparent by this. No inconvenience is experienced from the instrument except in the back; the patient being thin, the pad presses uncomfortably on the spine. March 12. Tumour appears very distinctly reduced in bulk, more elastic, less stony in feel, less pointedly knotty on surface, less sharply defined: all these changes are to a very small amount, but they are nevertheless positive. Catamenia for last two days. March 30. Tumour (which has been gradually decreasing) is now scarcely more than half the original size; some slight indication of absorbents with tenderness of the skin, and slight redness: nothing in axilla (instrument much disturbed yesterday in the carriage, and edge pressing against skin).

From this period until the middle of August the progress of things was slow and interrupted; twice, at the menstrual period, the tumour enlarged slightly, without however becoming painful. I gradually increased the force of the spring (which had always been carried over the shoulder) to six pounds, and diminished the diameter of the bag three and a half inches—by which a great increase of pressure was obtained; and, at the date named, the tumour was about one-third only of its original size, had become freely

moveable under the skin, and the general knottiness and hardness of the gland had almost disappeared; patient had lost altogether the headaches which used to torment her. I now lost sight of the patient (first through my own, and then her absence from town) till the middle of November. During all this period the instrument had been more or less neglected, and not applied at all for the last month: the use of the pills had also been interrupted. November 23, 1843. The tumour is now at least half as large again as when I first saw it: it is more painful than ever, and has reacquired all its original characters; it is, however, still non-adherent. I reapplied the cushion of the diameter first used, and within a week a favourable change had taken place; the tumour continued thenceforth to diminish in size until it was reduced to the size of a hazel-nut. This little nodule appearing immoveable, I, at the close of January, 1844, directed the iodide of lead ointment to be smeared on the part twice daily, the pressure being at the same time continued. The effect was almost immediate, so much so that the patient, after the lapse of a fortnight, requested to be allowed to use the inunction without the pressure: the impulse to absorption had been given; the tumour steadily decreased in size, and had totally disappeared at the close of April, 1844. I have within the last few days (August, 1845) examined the breast, and found it in every respect like its fellow, without a vestige of tumour or induration of any kind.

Here, then, was a tumour, which (though it had so far not given rise to any of the more terrible evils appertaining to cancer) yet possessed, in the clearest and best-defined manner, the sum of characters assigned by universal experience to growths pursuing the common course of that disease; and this tumour disappeared completely under the persevering use of the means described. Had the growth been removed with the knife, the chances (as will fully appear in the sequel) are extremely strong that, within the present period, the disease would have reappeared, and perhaps destroyed its victim. But from the very perfection of success in this and similar cases, an objection may arise in some minds. It may be urged that, as in such cases a mass, composed of indefinitely vegetating cells, is removed from its original site by absorption, the displaced cells may, in some new abode, germinate and flourish. But the objection is a fallacious one. The absorption effected in such cases must, on physiological grounds, be considered of the kind I have termed unproductive, and clinical experience, so far as it has yet gone, corroborates, in the non-reproduction of tumours thus dispersed, the justness of the physiological principle.

*British and Foreign Med. Review, Jan.*, 1846, *p.* 219.

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88.—ON THE USE OF MURIATE OF BARYTES IN THE TREATMENT OF SCROFULOUS AFFECTIONS.—By A. J. Walshe, M.D., F.R.C.S.I., &c.

[Dr. Adair Crawford was the first to call the attention of the profession to the use of this remedial agent in the treatment of scrofulous affections. There is a notice of it by him in the Medical Communications for the year 1789. He remarked that it combined the action of an evacuant, a deobstruant, and a tonic; that its incautious use was likely to be attended with a host of unpleasant and even dangerous symptoms, as loss of appetite, thirst, nausea, constipation, deafness, loss of sight, and paralysis of the voluntary muscles; to obviate this, he advises the use of a saturated solution, gradually increased from four to ten drops, as a dose.]

He dissolved half a drachm in an ounce of distilled water, and gave from ten to fifty drops, according to age—that is, roughly from half a grain to three grains of the solid muriate. When he administered it to infants, he added a syrup to diminish its irritant effects; when the stomach was affected with spasm, he combined it with some aromatic or anti-spasmodic; he mentions that its activity in certain diseases of the skin is much increased

by the addition of emetic wine, Plummer's pill, and cicuta. In very delicate subjects, he exhibited it according to the following formula:—Muriate of barytes, Muriate of iron, of each half a drachm. Water distilled, syrup of orange peel, of each an ounce. The dose of which is from twenty to thirty drops every three hours. Dr. Crawford has also recommended its conjunction with iron; indeed, the solution of barytes, which he used in his first experiments, contained a minute proportion of iron.

The French physicians usually recommend a drachm of the salt to be dissolved in two pints of distilled water, of this a tea-spoonful, that is about half a grain of the barytes is taken in a tea-cupful of infusion of hops, or some other bitter, every morning, fasting; this dose is gradually increased, its effect being watched with great care. The form in which I have usually exhibited it varies from that heretofore followed in being in pill. I at first exhibited it in this manner to avoid as much as possible the too speedy decomposition of the medicine in the stomach, and at the same time to prevent its being so rapidly absorbed as it would be in a fluid state. I have always commenced with very small quantities, one-twelfth of a grain three times a day, gradually increasing the frequency of the doses, rather than the quantity in each. I think it desirable that it should be taken after meals, so as to defend the stomach from its rapid action. With these precautions, though I must confess it was with some anxiety that I awaited its effects the first time, I have never experienced any inconvenience in its exhibition.

[In that form of ophthalmia attended with great intolerance of light, so characteristic of the scrofulous form of this disease, Dr. Walshe has observed it very useful. He says, however,]

I do not wish it to be understood as my opinion that muriate of barytes should supersede iodine in the treatment of scrofulous diseases, in which we frequently derive such eminent services from the latter, but I think I am warranted in inferring, after a careful examination of these cases, that that there are some cases of scrofulous disease, in which iodine is useless, or may be worse than useless, and when we may derive considerable service from the muriate of barytes; and further, that there are some cases in which we experience beneficial results from iodine up to a certain point, beyond which, if it be persisted in, its beneficial action ceases, and it proves noxious. In these cases the treatment may be advantageously taken up with the barytes, and vice versa.—*Dublin Med. Press, Feb.* 18, 1846, *p.* 100.

89.—TOPICAL EMPLOYMENT OF COD-LIVER OIL, IN THE TREATMENT OF CERTAIN STRUMOUS AFFECTIONS.—By Dr. Brefeld.

In cases of tumefaction of the lymphatic glands of the neck, axilla, and groin, this physician prescribes, with success, the employment of cod-liver oil in frictions to the inflamed and painful parts. He says that he has observed that this topical medication becomes useless, when it is used with tumours which are the consequence of variola, scarlatina, or rubeola. In the case of scrofulous ulcers, consecutive to inflammation and suppuration of the lymphatic ganglions, he employs the following ointment:—Oil of cod-livers, 15 parts. Liq. of subacet. of lead, 8 parts. Yolk of egg, 12 parts. Make into a homogenous ointment.

We can, in the preparation of this ointment, replace the yolk of egg by an equal quantity of lard. This ointment may be applied to the ulcers, lightly, by means of a feather. In scrofulous ophthalmia, M. Brefeld smears, twice or three times a-day, the margins of the eyelids, with pure cod-liver oil, which he applies by means of a camel's hair brush, or a feather. In scrofulous peritonitis, this practitioner rubs the cod-liver oil on the surface of the abdomen; and when the latter is painful, he recommends to warm the oil.—*Journal de Pharmacie*, April, 1815.

*Dublin Hospital Gaz., Nov.* 15, 1845, *p.* 107.

## 90.—BROMINE AND ITS PREPARATIONS.

The very high price which iodine has attained within the last twelve months, has rendered it very desirable that a substitute should, if possible, be obtained for this medicine, which is at present so extensively employed. Bromine and its preparations have been shown by the experiments of Majendie, Barthez, Brame, and others, to possess therapeutical properties as nearly as possible identical with those of iodine and the iodides. The scarcity, however, of bromine, and, consequently, its commercial value, has hitherto prevented its general employment as a remedial agent; but the recent discovery of it in large quantities in America has recalled attention to this substance as a substitute for iodine. Mr. O'Reilly, of this city, while lately in the neighborhood of New-York, having had his attention called to the peculiar properties of the mother waters of many brine springs in the United States—the result of their evaporation for procuring common salt, found by experiment that they contained bromine in large quantities—nine drachms in every gallon. Having procured a large amount of bromine from this source, he has brought a hundred pounds weight of it home, and states that he can obtain an almost unlimited supply of it; the price at which it is now sold in Dublin is eighteen pence an ounce, while the present price of iodine is three shillings and six pence an ounce. These circumstances have induced us to include in our retrospect a short account of the doses and mode of administration of bromine, and its preparations.

The forms in which it has been used on the continent are, in the simple state much diluted, and combined in the form of bromides with potassium, barium, calcium, iron, and mercury. These preparations are made by processes exactly similar to those used for procuring the corresponding combinations of iodine. As a substitute for the tincture of iodine, M. Pourche has employed the following solution: bromine, one part; distilled water, forty parts; dose, from five to six drops in some aqueous vehicle, three or four times daily. For external use he employs a solution four times as strong as this. The bromide of potassium is very soluble in water, sparingly soluble in alcohol: the dose of it is from four to eight grains three times a-day: to prepare an ointment from it, four parts are rubbed up with thirty-two parts of lard; and if a stronger ointment, or one resembling the compound iodine ointment, be wished for, six drops of bromide are added to this. The bromide of barium is also soluble in water; the dose of it is from one to five grains three times a day; the ointment is prepared by combining it in the proportion of one part to ten of lard. The bromide of calcium is prescribed in the form of pill made with the conserve of roses; the dose of it is from three to ten grains. The bromide of iron is a brick-red deliquescent salt, very soluble in water; it is not so easily decomposed as the iodide of iron, and is given usually in the form of pill made with conserve of roses and gum arabic; the dose of it is from one to three grains: it has been employed externally, also in the form of ointment, prepared with one part of the bromide to fifteen of lard. Two bromides of mercury have been used; the first, a sub-bromide, is a white insoluble powder: the dose of it is one to two grains daily: the second, a bromide, is fusible and volatile, and soluble both in water and alcohol: its dose is one-sixteenth of a grain, gradually increased to one-fourth of a grain, daily. All the preparations of bromine may be readily known from those of iodine by their not disengaging violet-coloured vapours when concentrated sulphuric acid is poured on them. In France, bromide of potassium has been of late fraudulently sold for iodide of potassium, in consequence of the high price of the latter; a sophistication of but little importance, if, as we are inclined to believe, the medicinal action of both be identical.

*Dublin Quarterly Jour. of Med. Science, May, 1846, p. 533.*

**91.—ON THE PHYSIOLOGICAL EFFECTS OF DIGITALINE.—By MM. BOUCHARDAT and SANDRAS.**

[The active principle of digitalis, the action of which is described below, has lately been isolated by M. Homolle.]

MM. Bouchardat and Sandras have also instituted a number of experiments on digitaline, and it results from these experiments, they observe, that digitaline is an excessively active substance, especially when it is pure. It acts with violence not only when it is injected directly into the veins, but also when it is taken into the stomach. It singularly modifies the circulation, and is capable of irritating the digestive organs in a high degree when it is applied to them. These experiments, then, having sufficiently enlightened us as to the energy of the principle extracted from the leaves of the digitalis purpurea, we were next desirous to ascertain the results that might be expected from so powerful a remedy when given in proper doses. It was, above all, important to obtain a correct knowledge of the action of this poison on the circulation, at the same time avoiding to excite the irritation which it is able to cause in the digestive apparatus. With this object in view we prepared pills, containing a tenth of a grain of digitaline, by means of mucilage and marshmallow powder. We exhibited these pills to patients in whom a greater slowness of circulation might be useful, and whose state did not allow us to fear any injurious results from the use of an agent capable of irritating the digestive canal.

In these conditions we have observed important modifications of the circulation. All our patients had a marked slowness of pulse. It was felt before the experiments was commenced, it was felt again five or six hours after the administration of one of the digitaline pills; and again the next morning. We found that the greatest depression of the pulse took place in general some hours after the exhibition of the medicine. It was then found in several instances to be diminished in frequency to the extent of nearly one-half the normal condition; it was however, very often only one-third or one-fourth. The next morning it became rather more frequent, but it always remained from ten to more beats below the normal pulse. For example: in a young epileptic girl, whose pulse, habitually unequal, varied from 80 to 120, we have frequently found it only 50 in the minute under the influence of digitaline. A man, fifty years of age, who had been several times the subject of apoplexy, and whose pulse was never higher than 48, several times had it reduced to 36. A woman, fifty years of age, phthisical to the last degree, and often troubled with hæmoptysis, with a pulse generally from 120 to 131, has had it fall to 96 or 94. A woman, in whom we were desirous to increase the urinary secretion, had the pulse reduced for several days from 120 to 128 beats to 92, 88, or 85. In all these cases we found that the action of digitaline on the circulation was shown not only by a diminution of the frequency of the pulse, but also by its irregularity. This irregularity appeared to us to be of two kinds; the interval of the pulsations was unequal: this was the most remarkable irregularity; else the character of the pulse was altogether different, the pulsation being one side hard and very quick, at another hard and prolonged; it is sometimes soft at intervals, else it continually preserves that character. Almost all the cases which we have noticed have shown analagous results.

Only one of our patients mentioned any modification in the urinary secretion, and we were not able to attribute that fact to any other appreciable cause than the exhibition of the medicine. But besides this physiological phenomenon, there were others, of which it is important to take notice. Several patients have complained of disorders of the senses, light-headedness, annoying dreams, and hallucinations. These phenomena always occur at the commencement of the toxic effects of digitaline. They were soon followed by more or less frequently repeated diarrhœa or bilious vomiting. When this has occurred, we have, of course, always stopped the use of the medicine; but, in spite of all the precautions which could be adopted,

the vomiting sometimes lasted for two or three days. The appetite was lost at the same time, and quietude and time were required to re-establish the digestive functions. The toxic effects of the digitaline were not generally produced at first; for the first two or three days it seemed as if the patient had not taken any thing out of the way, but suddenly, and without any previous warning, the effects of the ingested substance began to show themselves. The slowness of the pulse became then most marked. If its use be continued, the pulse becomes yet slower under its influence, but at the end of some hours it again becomes frequent, doubtlessly induced by the irritation of the digestive organs, which this singular body does not fail to produce.

En resumé, digitaline is one of the most active vegetable substances we are acquainted with. The attentive and sustained study of its effects on the circulation might furnish some useful indications for practice; but at present we believe it to be our duty rigorously to declare that it is an agent of exceeding energy, the action of which must be attentively supervised, its sudden toxic power being especially to be feared, notwithstanding the security in which the medical attendant is left for several days. Digitaline possesses exactly all the active properties of digitalis; this new substance may, therefore, be of service in all those diseases where digitalis has been employed with success, and the medical man may always know correctly the quantity of active priciple which he employs.

4th. *Dose and mode of administration of digitaline.*—The dose and mode of administration of this most energetic agent require the greatest circumspection. MM. Homolle and Quevenne from comparative essays have found that four milligrammes of digitaline correspond, in regard to energy of action, to about eight grains of the powder of digitalis purpurea, prepared with the greatest care, and taken in a state of purity.

5th. *Pharmaceutical preparations.*—MM. Homolle and Quevenne recommend the following preparations as the most convenient forms for administering digitaline:—

*a. Granules of digitaline.*—One gramme of digitaline, 50 grammes of white sugar, for a thousand granules, which are to be prepared in the same manner as the aniseed of Verdun. These granules, containing each a milligramme (one-fiftieth of a grain) of digitaline, may be exhibited in the dose of from four to six in the course of the twenty-four hours.

*b. Syrup of digitaline.*—Two grains of digitaline, 1500 grammes of simple syrup. The digitaline is to be dissolved in alcohol, and then added to the syrup. This syrup contains one milligramme of digitaline in every fifteen grammes of syrup. Dose from four to six spoonfuls in the course of the day, pure, or in a glassful of an appropriate effusion.

*c. Digitaline mixture.*—Five milligrammes of digitaline, 100 grammes of distilled lettuce water, twenty-five grammes of syrup of orange flowers. Dissolve the digitaline in a few drops of alcohol, and add the distilled water and syrup. To be taken by spoonfuls in the four and twenty hours.—*Phar. Med. Times, April*, 1845. *Dublin Hospital Gaz. Nov.* 15, 1845, *p.* 110.

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## 92.—STRAMONIUM CIGARS.

Stramonium has for a long time been recommended as a remedy for asthma and other disorders of the chest, and it is frequently used in a pipe with a portion of tobacco. Mr. Butler, of Covent Garden, has recently introduced cigars composed of the leaves of this plant, and we have been informed by several patients who have tried them, that the plan is more convenient than the one formerly adopted, and that the remedy is quite as efficacious, if not more so. A short time ago, a caution was issued to chemists, to the effect that these cigars could not legally be sold without a cigar-

license, and on this account we have deferred our notice of them. But we are now informed that this objection is overruled, it being decided that the stramonium cigars may be sold without a license as a remedy, as no tobacco enters into their composition.

In France, not only stramonium but several other medicinal plants are used in the form of cigars; and we have been informed that advantage has been found to result from the practice in some cases.—*Phar. Jour.*

*Dublin Med. Press, April* 29, 1846, *p.* 264.

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93.—TINCTURA RICINI.

The following conclusions have been arrived at by M. Parola, from experiments performed upon himself and others, with some new preparations of the ricinus communis:—1. That the purgative action of the ethereal and alcoholic tinctures of the seeds is four times more powerful than that of the oil obtained by expression, and that these tinctures are neither more emetic nor more irritant than the castor oil itself. 2. That these new preparations retain their properties unaltered for a very long time, whatever may be the climate or season. 3. That the purgative qualities of the ethero-alcoholic extract are comparatively less than those of the lees or pulp, from which it is obtained, showing that this pulp contains yet another principle, insoluble both in alcohol and ether. 4. The advantage possessed by these new medicines, of not being emetic, is easily explicable, as from not requiring to be taken in large quantity, they do not overcharge the stomach, nor excite it to contract for their expulsion.

*New Mode of Administering Castor Oil.*—The following method of administering castor oil is proposed by M. Righini, as being less difficult and disagreeable than when the oil is taken in the ordinary way, without diminishing its purgative properties:—Take of gum arabic in very fine powder, eight grammes; pure water, one hundred grammes. Make a mucilage with a little of the water, and then add of very pure castor oil, thirty grammes. Mix well, and dilute the mixture with the rest of the water. The filtered juice of an orange, and syrup of sugar, thirty grammes, are then to be added, shaking the whole well together.—*Jour. de Chime Medic.*

*Provincial Med. and Surg. Jour., April* 1, 1846, *p.* 150.

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94.—MODE OF TAKING CASTOR OIL.

[The following method of taking this aperient medicine is recommended by Dr. Wansborough, of Chelsea.]

Wet the inside of a wine glass, and the edge particularly. To a teaspoonful or two of brandy, add five or six drops of lemon-juice, and half an ounce, or a little more, of cold water; upon this, in the centre of the fluid, pour the requisite quantity of oil; desire the patient to open wide the mouth, and throw it down the throat. The flavour of spirit and acid remain on the tongue, and the oil is not tasted. Should the patient be of a nervous temperament, the practitioner must perform the act, which, simple as it may seem, requires a certain degree of adroitness and tact, to pass the fluid at once into the pharynx, avoiding the glottis, or it will not effectually answer the intended purpose.—*Med. Times, Feb.* 28, 1846, *p.* 442.

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95.—A METHOD OF MAKING THE PROTOIODIDE OF IRON.—By M. Kop.

It is known that the protoiodide of iron, prepared in the usual way, cannot be obtained solid in a state of purity. The limpid and colourless solution first formed, acquires a portion of oxygen from the air, and a part of

the iron is thus oxidised, while, at the same time, a portion of biniodide of iron is formed, so that the product consists of a mixture of iodide and biniodide of iron, with peroxide of iron. If this mixture be dissolved in water, the solution will be of a yellowish red colour, more or less deep, according to the quantity of biniodide, or even of free iodine present; the solution will also be turbid on account of the peroxide of iron held in suspension.

The author recommends the following method of preparing pure iodide of iron:—Triturate four parts of iodine with two parts water in a large dish; then add, at once, one part of iron filings in a state of fine division, and continue the trituration. In a few moments there will be manifested a considerable elevation of temperature, together with the disengagement of the vapour of iodine. Sometimes, especially if the temperature of the atmosphere be low, the heat developed from the mixture is insufficient to cause the disengagement of iodine vapour; but, in this case, it is only necessary slightly to heat the mixture, immediately after the addition of the iron filings. The mixture is at first liquid, but it soon becomes solid. There exists, in the protoiodide of iron thus prepared a small quantity of iron, which may be easily separated by a filter, when the salt is used in solution, and the filtered liquor will then be colourless, and free from the mixture of biniodide, or of free iodine. This preparation may be easily administered in the form of pills made with any proper excipient.—*Chemist, Schmidt's Jahrbuch*, and *Journal de Chemie et Medicine.*

*Med. Times* (*Pharmaceutical No.*), *Feb.* 1846, *p.* 21.

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# SURGERY.

## FRACTURES AND DISEASES OF BONE.

96.—TREATMENT OF FRACTURES.—By WILLIAM KERR, Esq., Glasgow.

[In the November number of the *Northern Journal* was an interesting article on the use of splints of a novel description, by Mr. Kerr, to which we can now only refer the reader, not having the engravings ready to illustrate their description. They appear remarkably well adapted to keep the limbs in secure positions, even allowing considerable latitude to the patient in his movements: in another paper of Mr. Kerr's, he says:]

Since the publication of my paper descriptive of a new species of splints for fractures, additional evidence has occurred of their utility, and I have been thereby led to make some improvements on their construction. Those who have read that paper may possibly recollect that the apparatus for fractures of the thigh was the least tried of all the contrivances, having been employed in only one case, and that a boy, so that it was then wholly untried in adults.

[This boy's case turned out so well that Mr. Kerr determined on using the splint in the treatment of the next case of fractured femur in the adult, which might occur to him. This happened soon after; a gentleman, forty years of age, fell and fractured his thigh a little beneath its middle. Mr. Kerr adds:]

My apparatus was put on. Neither inflammation, fever, nor any unpleasant symptom followed; on the contrary, his appetite was all along excellent; the pain began to abate from the time the thigh was properly secured in splints, and the swelling to diminish from the fourth day. From the second day, he was able to shift from one side of the bed to the other, with very little assistance besides that of cords tied to the roof of his bed.

From the sixth day, he sat for a few minutes daily on the edge of his bed, his feet resting on a stool on the floor. On the fourteenth day, he stood on one foot, with the support of two persons, till a clean sheet could be put on his bed. As long as he stood, one of his assistants bore up the weight of the splints. On the twenty-first day, the union of the bone appearing to be pretty firm, the bandages round the thigh and leg splints of the apparatus were taken off; and on the twenty-fourth day, the whole apparatus was removed, and the limb left bare. Not the slightest overlapping or bend of the bone, and consequently, not the slightest shortening of the limb could be discovered.

[Mr. Kerr's patient was able to move from one side of the bed to the other, and even to stand without displacing the fractured bones, so that what was said by Mr. John Bell, in his Principles of Surgery, cannot now be asserted, viz., that there is no machine invented yet by which a fractured thigh-bone can be perfectly secured. Mr. Kerr has made several improvements in his fracture apparatus, which he describes in his paper, from which we have taken the foregoing extract. The application of his apparatus to cases of hip-joint disease, we think may be a most important improvement in surgery. On this subject he says:]

Before concluding, I have only to repeat more emphatically, if possible, than in my first paper, the great benefit and relief given by my splint in disease of the hip-joint. If suppuration has not formed, a cure may very probably be effected by wearing a splint, aided by warm clothing, moderate exercise in the open air, a nutritious diet, and often wine and tonics. If suppuration has occurred, great relief may still be given by the above-named means, but the prognosis is much more doubtful. The younger the patient, the more readily does suppuration occur. It may appear presumptuous to oppose the ordinary and long established practice of issues, blisters, and bleeding. I have formed my opinion upon the testimony of patients, or their guardians, who consulted me, and in every case of diseased hip-joint, where these measures had been adopted, aggravation of the complaint, and of the sufferings of the patient had evidently been the result. I likewise found that the parties had previously arrived at the same conclusion with myself. I cordially agree with Mr. Coulson's condemnation of issues, in his excellent work on Disease of the Hip-Joint, and merely wish that he had extended his condemnation farther. The immediate relief from pain, which I have repeatedly witnessed by the application of a proper splint, decidedly proves that the sufferings of the patient are owing to the friction of a diseased head of the bone on a diseased socket. What then can be gained by issues, blisters, and bleeding, while no efficient plan is pursued to prevent motion? If my statement is true, that a splint does relieve the pain, and gives almost perfect ease to a patient, who, for weeks previously, had spent his days and nights in agony, what need is there for counter-irritants? It will be said, that they are intended to remove the disease, which causes motion to be painful. Here I appeal to the experience of patients themselves. Often have I been told by a patient, "I was only slightly lame till I applied blisters and issues, but I have since got much worse, and been scarcely able to be out of my bed;" or watchful and intelligent parents have said to me, "We were directed to apply a blister, and this doing no good, an issue was next prescribed, but since these remedies were resorted to, the pain, which was trifling, has become agonizing."

*Northern Jour. of Medicine, Feb.*, 1846, *p.* 76.

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97.—ON FRACTURES AND DISLOCATIONS.—By G. O. Jarvis, M.D., Connecticut, United States.

[Dr. Jarvis, in a course of lectures delivered at the Royal Westminster Ophthalmic Hospital, on Fractures and Dislocations, in alluding to the me-

chanical principles to be adapted in their treatment. He exhibited a peculiar instrument intended to fulfil the following indications:]

1. To establish a line of extension between any two given points of the body. 2. To furnish an extending force which is unlimited in principle, yet easily calculated, and which is perfectly subject to the will of the operator. 3. To be able to combine with the simple extending force a lever of the first or second order, according to the exigency of the case, to act transversely to the line of extension, yet, without in any way interfering with it, subject, in like manner, to the will of the operator. 4. To fulfil all these indications without in any way interfering with the mobility of the limb. 5. To enable the operator to apply the force, whether direct or transverse, either rapidly or slowly, and to retain it on the limb during his pleasure.

These indications may be fulfilled in the following manner:—A brass box or case contains a rack-bar and a pinion-wheel within the case, the teeth of which match into those of the rack-bar, the pinion-wheel within being at one end of the brass-case; the brass case is about thirteen inches long, and is divided in the centre lengthwise, so as to form two ways, one for the rack-bar, which is always the extending bar, and the other for the counter-extending bar, which may be drawn out and fastened by a small screw, at any desirable point. On the surface of the brass case, and on the same shaft with the pinion-wheel, is a ratchet-wheel, with a catch, corresponding to the teeth of the ratchet-wheel; the shaft of these wheels terminating in a square heel, to which the lever is applied. On the end of the counter-extending bar is received, according to the case to be treated, one of the four forks, the thigh fork, the shoulder fork, the jointed fork, or the elbow fork; these are each received on the end of the counter-extending bar by their sockets, and each in its turn, according to the case to be treated, is used as the counter-extending point of the instrument; while the end of the rack-bar, which is turned at a right-angle with the part which is received into the case, is always the ending point of the instrument. There is also a side lever, which is used to apply force transversely to the line of extension, as in dislocations of the hip; the socket is slipped on the end of the brass case, and when the thigh-fork is received by its socket on the end of the counter-extending bar, the plate passes between the thigh-fork and the roll, hanging loosely between the arms of the fork. To these belong several belts, straps, &c., which are for taking hold of the limb, securing the instrument, &c.; which you will readily understand in applying the instrument—since the requisite instructions are always furnished by the manufacturers, Mr. Weiss and Son, No. 62, Strand, London. *Lancet, Jan.* 10, 1846, *p.* 29.

[Dr. Jarvis lays down four principal rules, which he regards as essential in the treatment of all fractures, by his apparatus.]

1st.—So place the limb as that the fractured portions shall be inclined the nearest to a normal line of that bone, which can be effected by the action of these agents. 2d.—So apply extension and counter-extension as that the smallest amount capable of preserving coaption shall be employed. 3d.—So apply force as that the line of extension shall operate the nearest possible to a perfectly normal line of the fractured bone. 4th.—Let the points of extension and counter-extension be confined within the limits of the fractured bone. If, in our treatment, we succeed in applying efficiently these four rules in practice, it is conceived that we then have the laws of mechanics conformed effectually to the principles of surgery, in the treatment of fractures; if not, we fail in our object.

[In a recent visit to Paris, Dr. Jarvis was somewhat surprised to find that exactly the same principle of treating fractures as his own, was adopted in the Val de Grace, a military hospital. It was, however, attended with some inconveniences, and not always resorted to. Dr. Jarvis's contrivances are certainly very ingenious, and must be effectual. We suspect, however, that they will not be brought into general use in this country, as simpler and much less costly apparatus are very efficacious in the treatment of fractures.]

*Lancet, Jan.* 17, 1846, *p.* 59.

98.—TREATMENT OF FRACTURES OF THE THIGH.—By JOSEPH MACLISE, Esq.

[In the treatment of fracture of the femur, where the primary object is to extend and counter-extend, Desault's splint is generally made use of. When position is of the greatest importance, the double inclined plane or McIntyre's machine is preferred. Any instrument which would combine these two advantages will be a desideratum in the treatment of fracture of the thigh bone. Mr. Maclise has contrived an apparatus by which he proposes to do this. He gives three plans of apparatus; the third combines the principles of the two first.]

*Plan the first, explanatory of the principle of Desault's apparatus.*—After having ascertained the condition of those structures concerned in fractures of the thigh-bone at its upper third—namely, that the upper fragment of the bone, obeying the traction of those muscles which are inserted into the lesser trochanter, assumes a new position, and points towards the fore part of the limb, making its line of axis to form a more or less acute angle with that of the lower fragment, which latter lies horizontal, and coincides with the level of the body, stretched supine—we must view Desault's long splint applied, and take account of the principle of its application, which is, the maintenance of extension and counter-extension, upon which we discover the condition of the fractured bone to be as follows, viz. :—That the lower fragment of the femur is borne in the horizontal line of axis of the long splint; and however great may be the extension and counter-extension made in this direction, still it does not agree with the line of axis of the upper fragment, nor does it affect this latter. The distal extremity of the upper fragment may be felt at the fore part of the thigh, whilst the proximal end of the lower fragment is buried deeply in the centre of the soft structure.

*Plan the second, expressive of the principle of the double-inclined plane.*—When this apparatus is applied, it may be seen to support the lower fragment in the line of axis assumed by the upper end of the femur, but owing to the want of some power whereby the limb may be extended or counter-extended, the broken ends of the bone may be ascertained to have slipped aside of each other; hence there is shortening of the limb. The want of crepitus is proof that the fractured ends of the femur are not in apposition.

*Plan the third, an apparatus which combines the principles of both the above.*—The long splint of Desault may be passed through apertures cut in the outer side of the oblique boards of the double-inclined plane, upon which latter the fractured limb is to be supported, whilst, at the same time, the necessary degree of extension and counter-extension may be made as usual by means of the former; a stocking or hose may be applied so as to invest the sound limb as far up as the groin, and having connected to it, before and behind, two straps, with which the counter-extension is to be made in place of the perineal band. In consequence of the continued pressure of the perineal band upon the locality of the groin, excoriation and (in weak constitutions) very severe sloughing are produced; whereas, by making the counter-extension from this canvas envelope of the opposite limb, not only is this extreme annoyance prevented, but a pressure of tenfold force may be made, if required; all the amount of pressure would be thus diffused.

*Lancet, Jan.* 17, 1846, *p.* 68.

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99.—FRACTURED RIBS TREATED BY STRIPS OF PLASTER.—By Dr. HANNAY.

[Every surgeon is aware of the utility of a tight bandage round the ch to take off the action of the intercostal muscles when the ribs are fr. tured. The material most commonly used, as cotton, linen or flannel, r

laxes after it is applied and thus becomes useless. Dr. H. recommends the application of strips of adhesive plaster around the chest. He says:] The following is the mode of applying them:—I cut the most adhesive and best made diachylon plaster I can procure into strips four inches and a half broad, and of sufficient length to surround the thorax with a tail, which, after meeting around that cavity, will reach fully a foot beyond the point of meeting. I place the patient in a warm apartment, and close to a good warm fire, so that the plaster may be readily and thoroughly warmed, and kept perfectly soft during the application of it. Having ascertained the seat of the fracture, and having the plaster thoroughly softened, I place the middle (the sailor would call it the bight) of the strap on the fractured points. An assistant and myself each pull the ends of the strap very tightly, whilst another assistant supports the patient by preventing him from yielding in the direction we are drawing the plaster. The patient also empties his chest by expiration as forcibly as he can, at which conjunction the strap is brought in contact with, and made to adhere to the chest, encircling it tightly all round; the ends are crossed over each other. This first strap, or girdle, is followed by a succession of them, laid partly over each other, or imbricated: each strap should cover a third of the width of the one next it: they are applied in the same manner as the first, which, in the end (from the straps reaching up to the axilla, and down to the lower part of the chest, compressing that cavity powerfully), becomes slack, and another one is required to be put round over it. I then, to secure the firm and complete adhesion of this cuirass of plaster at every point, smooth it over with an Italian iron sufficiently, but moderately heated.

*Med. Gaz., Nov.* 21, 1845, *p.* 1283.

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100.—ON ABSCESS OF THE TIBIA.—By Sir B. C. Brodie, Bart.

[After alluding to organization of bone and its liability, the same as other tissues, to diseased action, and remarking upon the peculiarity of the symptoms in consequence of the presence of phosphate of lime, Sir Benjamin asks, what symptoms lead us to suspect the existence of abscess in the tibia, and what can be done for its relief? He replies thus:]

When the tibia is enlarged from a deposit of bone externally—when there is excessive pain, such as may be supposed to depend on extreme tension, the pain being aggravated at intervals, and these symptoms continue and become aggravated, not yielding to medicines or other treatment that may be had recourse to—then you may reasonably suspect the existence of abscess in the centre of the bone. You are not to suppose that there is no abscess because the pain is not constant; on the contrary, it very often comes on only at intervals, and in one of the cases which I have related there was, as I then mentioned, an actual intermission of seven or eight months.

After the disease has existed a certain number of years, indeed, the pain never entirely subsides, but still it varies, and there are periods of abatement and of exacerbation. The combination of circumstances which I have described will fully justify you in making an opening into the bone with a trephine. But how will it be if you are mistaken? This will not often occur, but if it should, really the taking out a circle of bone can be of no consequence; no injury follows the operation; it is unattended with danger. The operation is a very simple one. You expose the surface of the bone, and make a circular opening with a trephine at that part where there seems to be some tenderness and some pain on pressure. One principal thing to be attended to is that you have a proper trephine. You do not want so large an one as for the cranium, and it must be somewhat differently constructed. Those which lie on the table are made for the purpose.

One is of very small diameter, but generally it is quite sufficient. The common trephines are made with a rim or shoulder, and if there be much enlargement of the bone, they will not penetrate deep enough to reach the abscess. It is true that you may break away the bone afterwards by means of a chisel, but the operation may be more easily performed with a trephine having no shoulder; which will at once penetrate to the abscess, however deep it may be, and render the chisel unnecessary. The after-treatment is as simple as possible. There may be some pain for a day or two, and especially, as in the case I last mentioned, if the patient be an hysterical female, there may be hysterical pain afterwards; but all that is required is to maintain the general health, and lay on some simple dressing; the bone soon granulates, the space is filled up by a sort of fibrous substance, and the wound cicatrises.

The last three cases show that it is not safe to leave an abscess in the lower end of the extremity of the tibia beyond a certain time; that the joint is always in danger, and that the perforation of the bone is the only remedy. Even if you were mistaken in your diagnosis no harm can arise from the operation. Nay, it is a question whether good may not arise under such circumstances from taking away a piece of bone, where there is chronic inflammation in it, even though there is no abscess. The following very remarkable case will illustrate this observation:—A young gentleman, who lived at Brixton, was brought to me by Mr. Crowdy, a practitioner of that place, with violent pain in the middle of one arm, the bone itself being enlarged in that part to which the pain was referred. Some remedies were tried, which I need not enumerate, without any benefit. The pain continued and I began to suspect that there might be an abscess in the centre of the bone. Under this impression I proposed cutting down upon it, and making an opening with the trephine, so that I might remove the matter if there were any there. The operation was performed; the trephine penetrated to the centre of the bone, but no matter escaped. I persevered, but still there was no matter, and at last the instrument penetrated completely from one side of the bone to the other. The bone was very hard and compact, and it was as much as the trephine would do to run it through. I thought that I had made a blunder, and that there being no abscess the operation would not be attended with any benefit. The next morning the patient had an attack of pain almost as severe as before the operation, but it did not last long, and he had never any pain afterwards. The wound healed, the relief was complete, and I heard of the patient not long ago as having continued quite well. I presume that this was a case of chronic inflammation of the humerus, and that taking out the piece of bone from the centre, probably, partly by relieving the tension, and partly by a discharge of matter from the bone, unloading the vessels, accounted for the relief which the patient obtained from the operation. *Med. Gaz., Dec.* 12, 1845, *p.* 1399.

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### 101.—OSTEITIS OF TIBIA, PERIOSTITIS, TREATMENT OF BY IODIDE OF POTASSIUM.—CURE.

[A female servant, twenty-one years of age, was admitted into the Dublin Hospital with the anterior and upper portion of the tibia red, swollen, and painful, particularly to the touch; the countenance indicative of great distress; she had four grains of iodide of potassium three times a day, gradually increased to fifteen grains, after her food. The pain subsided, and on the sixth night after admission she slept well. The periosteal enlargements were decreased in size, and her general health improved. She had then half a drachm three times a day, which was subsequently increased to two scruples. Dr. O'Ferrall, under whose care she had been, is much in favour of the iodide of potassium in the treatment of periostitis; in this instance, which was so successful in its result, there was inflamma-

tory expansion of the upper part of the tibia, which occasionally ends in the formation of pus. Dr. O'Ferrall observes that]

It cannot be too often insisted on, that, in these cases, high doses of the mineral are often required for the cure; and that the proper time for its exhibition is after food. *Dublin Hospital Gaz., Nov.* 1, 1845, *p.* 85.

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102.—ON THE DIFFERENT KINDS OF STARCH BANDAGES, WITH AN IMPROVED MODIFICATION.—By J. C. Christophers, Esq., &c.

[During the last nine or ten years, the starch bandage had engaged general attention. In 1837 it was generally used in Paris, and throughout Belgium. Its utility, however, has of late been much more marked.]

M. Velpeau was the first to propose a modification of M. Seutin's method, which appeared under the title of "Note sur un nouveau perfectionnement de l'appareil inamovible," from which it appears that M. Velpeau had for some months substituted dextrine for starch, which he used as follows:—Take a quantity of dextrine and put it in a vessel, and begin to mix it by adding a small quantity of water very gradually: when it is well mixed, add to it a glassful of brandy, simple or camphorated. One or more unrolled bandages are put into this mixture, and are then applied.

The advantages M. Velpeau attaches to the use of dextrine are the following: 1st, that it hardens very slowly, and admits of being altered or adjusted during twenty-four or forty-eight hours after its application, in the same way as a cylinder of soft wax; 2nd, the advantages it has over starch is due to the circumstance, that the starch has to be boiled, and that it is almost indispensable to use it warm; that it must be smeared over the bandage either with the hand or a brush: further, it is difficult to starch the bandage efficiently after it is applied, as certain portions of the bandage must then be left unstarched.

The modification of M. Laugier is very ingenious; it consists in using strips of paper, smeared over with starch, in the place of a bandage, which, when applied, form a kind of pasteboard mould, consisting of one piece. The paper is cut into strips, according to the length and circumference of the limb, varying from an inch and a half to two inches in breadth, and from sixteen to twenty-two inches in length; and a number of the longer strips are also used starched together in a longitudinal direction, to add to the strength of the apparatus, forming, as it were, so many long splints, in imitation of the pasteboard ones used by M. Suetin. The advantages of this modification are the following:—the small cost of the material, the ease with which it can be at all times procured; the solid envelope it forms, composed of a single piece, moulded exactly to the limb, accommodating itself precisely to every irregularity on its surface, combining solidity and tightness with moderate thickness, and allowing the patient to move in bed, to employ himself, and speedily to walk. The objections to it are, that it does not exercise sufficient resistance; that it is easily torn in the neighbourhood of the articulations; that the patient is not able to walk so soon as with the starch apparatus, probably because it is not sufficiently solid; that if it be lighter it acquires this quality at the expense of strength; that it is more costly than starch, as it requires frequent removing, and a paper specially made; that it is difficult to apply, and does not always exercise the amount of compression required; and that it wants elasticity.

The modification of M. Lefargue has for its object the immediate solidification of the apparatus of M. Suetin, for which purpose he employed a mastic, composed of starch and plaster, aided in its action by pieces of wire. To give an idea of his method, I will cite a case of fracture of both bones of the leg in which it was employed; the wire was not used. The *patient* being seated on a bed, a bandage, soaked in lotion, was applied from

the toes to the instep, with compresses to the leg; a layer of bandage was applied around the leg, and smeared over with a thin coat of the mastic, over which another layer of bandage was placed, and again a layer of plaster. Graduated compresses were applied on each side of the tendo-Achillis, and two splints of pasteboard, previously soaked in water, and smeared with the mastic, were placed on each side of the leg; they were held in position by two layers of bandage, spread with the composition; lastly, the whole apparatus was smeared over with it. Two hours after application, the mastic was not dry, though it had set, and was therefore inflexible. The same bandage remained till the cure was affected; all went on well, and the patient recovered without deformity. M. Lafargue saw that the pasteboard interfered with the process of drying, and substituted fine threads of wire, which he placed between the layers of bandage. By this method a fracture is instantly and permanently maintained in position, the apparatus being as firm the moment after it is applied as at any subsequent period, the wires being too slight to exercise any painful influence on the skin, and the patient is able to walk with crutches from the moment the apparatus is perfected. The objections urged against this method are—First, the plaster and starch alone do not become firm immediately, though they become so more rapidly than when starch is used alone. Secondly, this effect is only obtained when the wire is used. Thirdly, the wire is not always easy to apply, and may either inefficiently confine the parts or may exercise painful pressure. Fourthly, the plaster and starch make a very disagreeable compound, crumble and strew the bed, and give rise to dust. Fifthly, an assistant is required to mix the mastic as it is used; the moment it is left it is spoiled. Sixthly, this bandage is more expensive than the starch bandage, and the material not so readily met with. Seventhly, it is not so elastic as the starch bandage, whence difficulties arise after setting it. Eighthly, it presents a harsher surface to the skin.

The modification of M. Van Meerbeeck has for its object the rapid desiccation of the starch bandage, and is as follows:—After the fracture is reduced, a bandage is applied over the limb, then two moistened pasteboard splints, without starch, having the form of those devised by M. Seutin, and over them another bandage. The apparatus is then left to become dry, which takes place in a few hours. By this method, a dry pasteboard mould is obtained, which may be strengthened by an addition of the same material, or by bandages smeared with starch, and a permanent and solid bandage is thus quickly obtained. It is thought that the above modification will prove useful in hospital and civil practice. The two last modifiers of the starch bandage are MM. King and Christophers; their method was published in the Medical Gazette, in February, 1839. In that paper, the authors, after deducing, from the consideration of the circumstances attending the formation of the callus, the superiority of the apparatus of M. Seutin in the treatment of fractures, state that it has one inconvenience, owing to its inability spontaneously to contract or to dilate, according to the condition and variation of volume in the parts it encloses.

[The starch bandage, from pressing equally on every side, fulfils the indications of treatment much better than the ordinary one, but it is open to one objection, viz., that being, when dry, inelastic, it does not allow of that increase or diminution of the limb which so often occurs. Dr. King says:]

In talking the matter over with Mr. Christophers, who was attending the case with me, it occurred to him that if it could be made so, it would be a considerable improvement; and the means he suggested, which are as simple as ingenious, I immediately adopted. He proposed applying around the apparatus, slit open, a certain number of elastic straps, made of India-rubber, with buckles, which admit of their being drawn to the requisite tightness. They are rather more than an inch wide, and rather longer than is necessary to encompass the limb. Four of these were applied, and converted the apparatus into a case sufficiently elastic to follow changes in the

volume of the limb, and yet of sufficient strength to afford the requisite support. It appears to me that Seutin's apparatus, thus modified fulfils, as nearly as possible, and much better than any other, all the indications required; and it must be evident, that it will be even a greater boon to the patient, affected with a compound fracture, than to one whose fracture is simple.

In case the limb undergo considerable diminution of volume, it will only be necessary to remove a longitudinal strip of the apparatus, instead of opening it by a longitudinal incision; and the strip should of course be removed, or the slit made along that side of the limb on which the nerves and vessels exist, and which can least bear pressure. We deem it not improbable that the apparatus thus modified will be found useful in the treatment of many diseases where it is essential to keep the parts motionless, without exercising an unyielding resistance or pressure in the least degree unequal. Mr Christophers proposes to employ it for that troublesome disease, a varicose state of the veins.

To this modification, neither Professor Seutin nor Dr. Pigeolet raise an objection (at least I have failed to find such in their work) though till lately a very serious one existed, which was due to the fact that common Indian rubber is so affected by temperature and the animal secretions, that in the one case its elasticity is too much increased, in the other its texture is destroyed. To obviate these inconveniences, I now employ a material that is not affected by temperature, by animal secretion, nor by grease, and the elasticity and resistance of which can be regulated up to the most delicate point. An amount of pressure varying from pounds to ounces, by a simple arrangement, is equally easily obtained. The material I speak of is called "Vulcanized Indian Rubber," a patent preparation of Indian rubber combined with sulphur. Either boiling water or grease may be poured over it, without in any way interfering with its properties, nor does it become hard by exposure to cold: this preparation has permitted me to make a further modification in the apparatus. I now propose to slit the plastic bandage in two, three, or more places, as the case may seem to demand, and instead of applying the Indian-rubber bands (which, however, answered admirably), I enclose the whole apparatus, thus slit into two or more strips, in a case or sleeve of the vulcanized Indian rubber, of a thickness equal to produce the amount of pressure or resistance I wish to maintain. The Indian-rubber case is so constructed that it may be fitted to the size of any limb by means of a lace, which is arranged to correspond with that portion of the limb along which the principal nerves and vessels pass, so that in cases where pressure cannot be tolerated over their course, by decreasing the strength of the lace, which is also formed of vulcanized Indian rubber, a diminution of pressure is effected through the whole length of the same. The object attained by this modification is, that the pressure produced and the expansion permitted will be equal throughout every part of the apparatus; whereas, when the bands are used, the resistance is greater, and therefore the expansion is less, over the identical spots occupied by them than over any other part. It is true I have not seen any inconvenience arise from this circumstance, but the great advantage the vulcanized Indian-rubber sleeve holds over them, and other methods, in addition to the power it possesses of accommodating itself to the changes of volume in the limb, consists in allowing the section of the bandage into one or many parts the moment it is applied in its wet state, thereby putting aside all risk of injury by pressure, should the limb swell before the bandage dries, a process that occupies some hours, its elasticity being sufficient to keep the slit portions of the bandage in intimate contact with the limb during that period. The extension, however, must be kept up till the bandage is dry and hard, a point I have always seen overlooked in applying Seutin's bandage in this country. Where the sleeve I have described is used, this may be accomplished by a long lath splint acting on the principle of Desault's long splint, and retained *in* the necessary position by a bandage till this takes place.

In cases where the sleeve cannot be procured, the bands answer well, and with a piece of vulcanized Indian rubber, any person, in a few moments, can make them. The comfort and advantages to be derived from this apparatus must, I am convinced, be felt, or at least seen, to be duly appreciated. This apparatus would, I think, be invaluable in cases of varicose veins, scrofulous joints, and in that kind of sore legs now treated by strapping, as it is easy to remove and to re-apply it uninjured, and the only difficulty would be to protect it from discharge.

*Lancet, March* 28, 1846, *p.* 354.

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## DISLOCATIONS AND DISEASES OF JOINTS.

103.—ON VARIOUS DISEASES OF THE KNEE-JOINT.—By Sir B. C. Brodie. Bart., F.R.S., &c.

[This joint is very frequently the seat of disease, and perhaps it is more liable to "inflammation of its synovial membrane," than any other. Should the inflammatory action be slight, there is an increased secretion of fluid, and some little increase in vascularity; sometimes, however, it becomes completely injected, and lymph may even be formed on its surface.]

When the disease has been of long duration, a change takes place in the condition of the synovial membrane, quite different from what is ever observed in the serous membranes. It becomes thickened, of a soft pulpy consistence; the inner surface is no longer smooth and uniform, but processes of soft vascular substance project from it, in the manner of fringes, into the cavity of the joint. In the commencement of this disease the morbid changes are, of course, confined to the synovial membrane: in a more advanced stage these changes extend to the other textures. That portion of the membrane which covers the cartilages, though it resists the disease in the first instance, becomes affected afterwards. The cartilages themselves adhere less closely to the bone than under ordinary circumstances, and by and by they begin to ulcerate; generally on the patella in the first instance, on the femur and tibia afterwards.

The fluid found in the cavity of the joint, when the synovial membrane is inflamed, is serous. In cases of a slight degree of inflammation, it is slightly turbid; in severer cases it is very turbid, with flakes of coagulated lymph floating in it. Under certain circumstances the synovial membrane will secrete, not mere serum, but actual pus. In like manner, serous membranes occasionally secrete pus, though under ordinary circumstances, they merely secrete serum. The cavity of the knee-joint is then converted into one large abscess; the abscess being bounded in some parts by inflamed synovial membrane, and in others by the bones of the joint. I say by the bones of the joint; for the cartilages, whenever they come in contact with the purulent secretion, become absorbed. Now let us suppose that there has been inflammation of the synovial membrane, and that is has subsided. In what condition is the joint afterwards? Sometimes the membrane is left thickened, of a gristly texture, and that may happen even where the cartilages and bones have altogether escaped the invasion of the disease. In other cases, the cartilages being absorbed, the cavity of the joint is completely filled up by the thickened synovial membrane, and the coagulated lymph effused from its surface. The parts all adhere the one to the other, and anchylosis by soft substance, in the first instance, and by bony substance ultimately, is the consequence. However, complete anchylosis does not occur except the cartilages have been completely absorbed. Where the cartilages have been only partially absorbed, a healing process is established. A kind of membrane is formed upon the surface of the bone in the place of the cartilage, and the joint retains its complete mobility.

[Should the whole of the cartilage be destroyed, the joint becomes anchylosed, but if only part of it, the joint retains its mobility.]

The patient very generally lies with the leg bent upon the thigh. It is better that it should not be placed in that position at first, but the patient very often gets it there before you are aware of it; and it is very difficult, when it is once in the bent position, to make it straight again. Now observe what happens: the synovial membrane and the ligaments are all distended, and must be all stretched, to a greater or less extent; and when the cartilages are ulcerated, very often the internal ligaments at one or other of their extremities become separated from the bone. The flexor muscles are constantly pulling at the head of the tibia and by little and little they draw it backward, until at last it is removed from its proper place, the condyles of the femur projecting in front of the head of the tibia, and the latter being lodged in the ham. There is then dislocation, sometimes complete, but more frequently incomplete, the head of the tibia being still partially in contact with the articulating surface of the femur. Even so great a change as this may take place without suppuration. I have known many persons recover with this kind of dislocation of the knee, in whom abscess never shewed itself. In fact, abscess is not a very common consequence of inflammation of the synovial membrane of the knee, being for the most part limited to two orders of cases: one, in which it supervenes after a long period, during which the disease has been neglected, the patient walking about and using the limb in spite of great suffering; the other, in which the first access of inflammation has been of more than usual intensity, the disease going on to suppuration in the first instance.

With regard to treatment in all cases of inflammation, and I may add, of other diseases of a joint, the first and most important thing is, to keep the joint in a state of quietude. In an acute attack the patient suffers so much from motion, that you need scarcely give him any injunctions on the subject. This, in fact, is the method that nature adopts for the purpose of informing him that the joint should not be moved. In case of chronic inflammation, also, the pain on motion is often sufficient to produce the same effect; but sometimes it is not, and then you must have recourse to some special means for keeping the joint in a state of repose. You may bind it up with a great quantity of diachylon plaster, and a roller over it, or with a starch bandage, either of which contrivances will keep the joint quiet, acting as a splint. But there are objections to both these plans, especially the latter.

The best contrivance for keeping the joint quiet is splints, made of thick and stiff leather, macerated in warm water, and allowed to dry on the part. They should be pretty broad splints, one being applied to each side of the joint, nicely adjusted to it, and kept on by a bandage. These splints, when dry, become as hard as a board, but they are easy to be worn, because they exactly fit. A row of artificial teeth is made of the hardest material—of ivory or gold; yet it is easy to be borne, because it exactly fits. Make equal pressure everywhere; and these splints cannot fail to fit the parts to which they are applied, as they are moulded upon them in the first instance. They give a more complete support than can be obtained in any other way; and they have this advantage, that if the joint should swell, or the splints be uncomfortable, the patient can easily readjust them for himself, making that degree of pressure which is agreeable to his own feelings.

In a more advanced stage of the disease, when the cure is nearly completed, and it is your object to limit the motions of the joint—not because there are any serious symptoms at the time, but lest there should be a recurrence of the inflammation—a bandage, made by Schoolbred, in Jermyn-street, may be applied with advantage. It is composed of spiral wire, enclosed between two pieces of leather, with a stiff piece of leather, of moderate thickness, behind, and laced on one side. The leather behind makes a very excellent splint, and the bandage being elastic, if the knee should *swell a little, it does* not matter; besides which, the patient may draw the *lace as tight* or as loose as he pleases. In many cases, after inflammation

of the synovial membrane has subsided, and when the patient first begins to get about, it is advisable to let him be provided with one of these bandages. At the same time the heel of the shoe should be a little raised, so as to keep the knee slightly bent: this being much more convenient than the absolutely straight position.

[In cases of acute inflammation, general antiphlogistic measures may be required as well as the local abstraction of blood. Sir Benjamin remarks that:]

Blisters do harm when there is any very active inflammation going on, but they do great service afterwards; and they operate advantageously in two ways. First, by exciting inflammation in the skin, they draw away the blood from the synovial membrane, and lessen the inflammation there; and, secondly, by causing a great secretion of serum from the skin, they in some way or other cause the absorption of the fluid from the joint, and the fluid being absorbed, the tension of the synovial membrane which tends to keep up the inflammation is relieved.

I said that we had other means of subduing inflammation besides blood-letting. Of course, purging and diaphoretic medicines are useful in cases of inflammation wherever situated, but I meant to allude especially to what may be called specific remedies, namely, mercury and colchicum. A gouty person sends for you with acute inflammation of the knee, the urine depositing a red sediment. You find that he has lived freely, taken but little exercise, that acid is generated in the stomach, that he has been for some time flatulent, and his bowels costive. Having taken care that he is in the first instance freely purged, you may give him twelve minims of the vinum colchici in a saline draught two or three times a-day. Never give more than that, for large doses of colchicum are dangerous, and small ones accomplish all that is required. Even the latter should not be taken for more than two or three days at a time. Where inflammation of the synovial membrane depends on a gouty diathesis, the effects of colchicum are sometimes marvellous. I have known patients suffering extreme agony to be completely relieved by it in a few hours. But let me repeat, for this is of importance, that you should not venture on the exhibition of colchicum in this or other cases, without previously administering purgatives, and they should also be given occasionally while it is being used. Small doses of mercury also, the blue pill, for example, may be given at the same time. The tendency of colchicum is to produce white evacuations, which indicate, I suppose, a diminished secretion of bile. Of course it is not right that bile should not be secreted and evacuated, and the combination of mercury with the purgatives, at the same time that you exhibit the colchicum, prevents the injurious effects that might otherwise arise from the biliary secretion. Mercury may be administered with advantage in another way; that is, not as a purgative, not merely with a view to act on the secretion of the liver, but in larger or more frequent doses, so as to produce its specific effects on the general system. Such mercurial treatment may be often had recourse to with advantage in cases of gouty inflammation, but still more in cases of what may be properly called rheumatic inflammation. The combination of calomel with opium is a very convenient method of giving it in these cases, as it is in those of iritis. Useful as is the mercurial treatment during the active inflammatory state of the disease, it is still more useful at a later period, accomplishing that which can scarcely be accomplished by other means; as I shall explain presently.

There is no essential difference between the treatment of chronic and acute inflammation of the synovial membrane, except that in the former such active measures are not required as in the latter. Leeches may be necessary, but blood-letting from the arm is never requisite. Blisters are very useful here, and may frequently be applied without having recourse to leeches. You may employ either a succession of blisters, or one blister kept open for some time with savine cerate. In cases of gouty inflamma-

tion of the synovial membrane having a chronic character, colchicum may be exhibited as an alterative—one or two grains of acetous extract, with as much blue-pill, every night, and aperient medicine every third or fourth morning; or you may give the acetous extract, with calomel and the compound extract of colocynth, every second or third night: watching the effect of the remedies, and continuing their use for a longer or shorter time, according to circumstances.

In such cases a course of the iodide of potassium in small doses, combined with alkaline remedies, may also be productive of benefit. In slighter cases of the disease, liniments that stimulate the skin, but which fall short of a blister may be usefully employed. The volatile liniment, with oil of turpentine added to it, or the compound camphor liniment, may be rubbed on two or three times daily. The following makes an excellent liniment:—Take an ounce and a half of olive oil and a drachm of sulphuric acid; when these are well mixed together, add half an ounce of oil of turpentine. This makes a black liniment, which may be rubbed on with a bit of lint twice daily until the skin becomes inflamed and tender. It will produce a good deal of inflammation in the skin, but not a blister. Another convenient method of stimulating the skin is to paint the knee by means of a camel's hair brush with a solution of a drachm of iodine in an ounce of alcohol. This may be omitted when the skin is tender, then applied again, and so on.

I said that mercury was useful in another and more advanced stage of the disease, when the altered character of the pain, attended with starting of the limb at night, indicates that ulceration is going on in the cartilages. Here the only remedy is mercury, and the effect of it is remarkable. Make the gums sore, and the patient who was suffering tortures, will, in a few days, be quite relieved. If it be administered at a sufficiently early period, it will save the limb, but will not prevent anchylosis. Mercury should be given here in the same manner as in cases of iritis, or chronic inflammation of the testicle. Calomel and opium may be administered two or three times a day till the gums are sore, mere alterative doses being insufficient. It is, however, seldom necessary to continue the exhibition of mercury for any very lengthened period. I think that one of the greatest improvements of modern surgery is the exhibition of mercury in these and some other cases of ulceration of the articular cartilage. I do not know any other remedy that will answer the same purpose.—*Med. Gaz., Feb.*, 6. 1846, *p.* 221.

*Treatment of Abscess of the Knee-Joint.*—[In these cases the suppuration often involves the whole joint, which is one large abscess. The treatment is comparatively simple.]

Make an opening as soon as you can, and let out the matter. But what kind of opening? Not a small or valvular one. I really think that there never was a more absurd proposal than that of making a small and valvular opening for such large abscesses. A small and valvular opening will not allow all the matter to escape; it heals directly, and the matter is again collected. All large abscesses, and those of joints especially, should be opened by a very free incision, so that this pus may flow out without squeezing, or any kind of rough manipulation. I know that mischief sometimes arises from opening a large abscess; but I also know that it is generally from the fault of the surgeon. If a small opening be made, it is only by squeezing and pressure that the abscess can be emptied of its contents; and this rough treatment induces inflammation of its parietes. Not unfrequently it causes also a discharge of blood from the small vessels, which, mixing with the pus that is secreted, afterwards becomes putrid; and I need not occupy your time at present by describing the ill-consequences of a putrid abscess. There should not be the pressure even of a finger on the abscess, with a view to force out its contents. Make a free opening, let the matter flow of its own accord, at the same time keeping the joint in a state of absolute and complete repose by means of leathern splints, or by supporting it with pil-

lows and cushions, and it will scarcely ever happen that any mischief follows. If the first opening be made in a depending part, it may be all that is wanted. It may be, however, that one or two openings will be required in other situations afterwards. By pursuing this plan of treatment, and very gentle management so far as your hands are concerned in it, you will generally succeed in preserving the limb. In these cases the disease has its origin in the soft parts. The bones are in the first instance in a healthy state, and the progress of the disease is so rapid, that, although deprived of their cartilages, there is not time for the bones to become materially diseased afterwards: and this explains why there is so much better chance of preserving the limb where there is this kind of abscess in a joint, than where such an abscess occurs under other circumstances.

Of course, after this extensive suppuration, which is always attended with a total absorption of the articular cartilages, no better recovery is to be expected than that by anchylosis; but this is a good recovery, for the limb will be very useful afterwards. Some months may elapse before the limb will be in a fit state to bear the weight of the body; and during the greater part of this time it will be necessary to keep the joint supported by splints. These may be the common leathern splints, unless the leg be bent on the thigh, in which case it will be necessary to have recourse to the screw instrument, with the splints at the posterior part of the leg and thigh. In using the screw, however, you should observe that it is better to leave the leg a very little bent on the thigh rather than quite straight. The former position of the leg is more convenient for walking than the latter, especially if the patient has the heel of his boot or shoe a little raised.

*Med. Gaz., March* 6, 1846 *p.* 398.

*On Gouty Inflammation of the Synovial Membrane of the Knee-Joint.*—[This disease is met with in those who lead an indolent life, and indulge too freely in wine and animal food: some of the smaller joints are generally affected first, and it has this peculiarity that there is seldom much effusion within the joint; the synovial membrane becomes thickened, and then absorbed, and the cartilages are not unfrequently removed by a continuation of the disease to their structure. Sir Benjamin observes,]

In the course of time, that is after the lapse of some years, the cartilages, and even the bones, become absorbed; the fingers being actually shortened and twisted in a variety of ways. Not unfrequently, in cases of long standing, the bones of the knee, examined in dissection, present a singular appearance, as if they had actually been worn away by friction; and in fact they are so worn away, but as a process of repair has been going on at the same time, instead of the cancellous substance being exposed where the friction has taken place, they present a hard and compact surface. In some instances there is a deposit of lithate of soda, or chalk-stone, in the joint itself, and in its neighbourhood. This, like the last, is a very troublesome form of the disease, and is very little under the dominion of remedies. That which, on the whole, I have found to answer best, is the exhibition of very small doses of the acetous extract of colchicum—say a single grain, with the same quantity of blue pill and three grains of extract of hop, every night at bed time, with a gentle aperient once in three or four mornings. You may exhibit these pills for a fortnight, stop them for one or two months, then give them for a fortnight again, and so on. At the same time give a grain and a half or two grains of iodide of potassium, with ten or twelve grains of the bicarbonate of potash, twice daily, and let this be persevered in for six or eight weeks at a time. This system may be continued, with occasional intermissions, for one or two years, or even longer. I have seen several cases where the patient has been much benefited by it, but in others I must acknowledge that neither what I have now recommended, nor any other treatment, has had really any dominion over the disease. This chronic gouty affection (for so I may call it) is not in itself dangerous, but it indicates a bad state of constitution; and persons thus affected are liable to other diseases. *Med. Gaz., March* 6, 1846, p. 398.

*Scrofulous Disease of the Knee Joint.*—[It is hardly necessary to describe the symptoms of this affection. They are tolerably familiar to most surgeons. We give Sir Benjamin's valuable remarks on the treatment:]

I need not occupy your time by describing other methods of treatment which were formerly proposed, or which are, to a certain extent, now in use. It will be better that I should at once explain the results of my own experience on the subject. First, let me say a few words as to what ought not to be done; and a very important consideration this is on many occasions. Blood ought not to be taken away from the joint, either by leeches or by cupping, and far less should it be taken from the general system. The disease depends on a weak state of the constitution, and the abstraction of blood will only tend to its aggravation. Neither blisters, setons, issues, tartar emetic ointment, nor any other kind of counter-irritant ought to be employed. Such remedies torment the patient; they make him ill from the general disturbance of the system which they produce; they lower him by the continued discharge of matter, and do no good whatever to the malady. I express this opinion in the strongest and most confident manner, having seen this kind of treatment extensively practised formerly, and being able to compare the results with those arising from the treatment which I have since employed.

There is one great principle to be attended to in the treatment of all diseases of joints, namely, that the joints should be kept in a state of perfect repose. If there were an inflammation or a sore in the leg, and it were rubbed all day long, would that inflammation ever subside, or that sore ever heal? If a diseased joint be subjected to friction, as it must be when it is kept in motion, is it likely that a cure can be effected? There is no mode of surgical practice more important than this, that a diseased joint should be kept in a state of perfect immobility. In the early stage of the disease this is the only local treatment that is required, and, indeed, it is the chief thing to be attended to even in its most advanced stages. There are different methods of keeping the knee in a state of immobility. The simplest method is that of employing the leathern splints which I formerly mentioned, one on each side of the joint. It has the advantage of giving very complete support; at the same time that the splints are easy to be worn, because they exactly fit the parts to which they are applied, and that there is the further advantage of the patient being able to take them off and put them on for himself.

[The general health is to be attended to at the same time that the joint is kept quite at rest.]

As soon as the digestive organs are brought into a proper state, the patient will generally be benefited by the exhibition of what are called tonics, but especially of some preparations of iron. To children I give the vinum ferri of the old Pharmacopœia, proportioning the dose to the age of the patient. This generally agrees with him very well; and if to this be added the occasional exhibition of purgatives, other medical treatment is seldom required. The patient may take this or some other preparation of iron for three weeks, omit it for ten days, then resume it for three weeks, and so on for an indefinite period: by which I mean to express as long a period as two or three, or even four or five years, our object being not so much to cure a particular disease as to mend a weak constitution. Diseases may often be cured in a short space of time, but a weak constitution cannot be rendered a strong one until after the lapse of some years. The patient generally requires to be watched whilst he is using these remedies. They may overstimulate him and make him feverish, and then the dose requires to be diminished, or the medicine must be omitted for a time, to be resumed afterwards. I have mentioned the vinum ferri, but other preparations—for example, the tinctura ferri muriatis—may be exhibited, or the syrup of iodide of iron. I sometimes give the latter and the vinum ferri alternately. It appears to me that in these cases large doses of iron are not required;

small doses introduced into the system, off and on, for a great length of time, are what you are to rely upon. Five patients out of six will be benefited by taking iron. Every now and then, however, a patient is met with, with whom no form of iron agrees, and recourse may then be had to quinine, bark, or the alkaline solution of sarsaparilla. The latter combination agrees very well with delicate children, and may often be given with advantage in alternation with preparations of iron.

[In this, as in other scrofulous affections, there will be great benefit derived by a change of air, as well as the exhibition of medicines, and a seaside residence is the most desirable. When the joint has become stiff, there should be no violent efforts to straighten it; it should be done gradually, by means of a screw apparatus. When abscess forms in the joint, the use of splints is not to be discontinued, but they ought to be lined with oil silk, or the purulent discharge will spoil them; but should the disease be neglected, and the joint become quite destroyed, it is best to amputate the limb at once: at the same time, we should not resort to amputation in every case of this kind; for, in some cases, when a scrofulous knee has been removed, tubercle, perhaps before latent, has been called into activity, and the patient has died of phthisis. There are, however, some cases, where amputation should be immediately performed; for instance:]

If, by examination with a probe, it has been ascertained that there is a piece of dead bone connected with the interior of the joint, and so situated that it cannot exfoliate, the limb may be given up at once; there being no chance of a cure, and no remedy but amputation.

I have stated that where an abscess is formed, if the patient recovers, it will be generally with an anchylosed limb. Bony anchylosis will take years for its completion. A knowledge of this fact is of importance, as it shows that if the limb be bent, there will be plenty of time to get it into its proper place.

*Primary Ulceration of the Cartilages of the Knee.*—[This disease apparently may originate either in the cartilage itself, or in the orifice of the adjacent bone; but in what Sir Benjamin considers primary ulceration, it invariably begins in the surface next to the articular cavity. He says:]

On examining the joint in an early stage of the disease, the cartilage is found to be absorbed at one point, and the surface of the bone exposed and carious. Probably there is no effusion of any kind in the joint, neither serum nor pus; but the exposed surface of bone is more vascular than under ordinary circumstances. As the disease advances, the ulceration of the cartilage becomes more extensive, and when it has attained a certain point, pus is formed in the joint. As in some cases there is suppuration without ulceration, so in these there is ulceration without suppuration. As I have observed in a former lecture, the two processes are generally combined, but there is no necessary connection between them. The cartilages at last become destroyed throughout the knee—on the femur, the patella, and the tibia. Sometimes, when abscess forms, it is limited by adhesion to one part of the joint, and then perhaps suppuration takes place in another part of it. In other cases the abscess is not so limited; the whole joint is distended with matter, so as to form one large abscess; and in this stage of the disease, the bones in the neighbourhood of the joint become inflamed and dark coloured; the matter lodging in the cancelli becomes putrid, probably a portion of the bone loses its vitality and exfoliates into the articular cavity, while the abscess finds its way out in various directions, making numerous sinuses under the fascia, and among the tendons, before it presents itself externally.

While these changes take place in the affected joint, they are indicated by the following symptoms. Generally there are rheumatic pains in other joints in the first instance; by and by the pains are, as it were, concentrated in the knee. The pain is very severe, and yet the joint is scarcely at all swollen, or rather I should say that there is no swelling in the first

instance. After a time, there is a slight general enlargement of the joint, the consequence of a deposit of lymph, or serum, outside of the synovial membrane. The swelling assumes the shape of the articulating ends of bones, and appears greater than it really is; because the muscles of the thigh are wasted above, as those of the leg are below. The pain is aggravated by motion, and there is a painful starting of the limb at night. The pain is especially aggravated by pressure on the patella, and whenever, in this or any other case of disease of the knee, this symptom exists, you may suspect that the cartilages of the joint are beginning to ulcerate. The disease may go on not only for weeks but for many months, the patient's health suffering all the time, from disturbed rest at night and constant pain in the day, and yet without suppuration taking place. By and by matter forms, and then there is an aggravation of all the symptoms. The matter, as in all other cases of abscesses connected with the knee-joint, burrows in various directions among the muscles and tendons, making numerous and circuitous sinuses.

With regard to the treatment of this disease, it is important, in the first place, that the joint should be kept in a state of the most perfect repose; and splints are required here as in other cases of chronic affection of this joint. Although I believe that issues, setons, blisters, and counter-irritants, actually do harm rather than good in some other cases of diseased joints, yet I believe them to be beneficial here. A caustic issue inserted on each side the patella will very often stop the pain and the starting of the limb at night, when other means have failed. Nevertheless, issues are not always required, and, in fact, in the majority of cases they may be dispensed with. What, then, is the chief remedy to be employed? That which is used for chronic rheumatic inflammation elsewhere. Mercury given as for iritis, or chronic inflammation of the testicle, is here productive of the greatest benefit. Two grains of calomel and one-third of a grain of opium may be exhibited three times daily till the gums are affected. The influence of this agent in stopping rheumatic ulceration of the cartilage, is remarkable. In fact, it very seldom fails, if given before suppuration is established.

But some patients cannot take mercury; it either disagrees with them, or for some other reason you do not like to give it, and then sarsaparilla or the iodide of potassium may be substituted with great advantage. Mercury, however, is on the whole the most efficient of the three remedies; and, next to that, sarsaparilla. In many cases the best mode of proceeding is to exhibit mercury in the first instance, until the disease is arrested, and then follow it up by a course of some good preparation of sarsaparilla. The mercury should be exhibited till the gums are somewhat sore. If it disagrees in one way, try it in another. Mercurial ointment may be rubbed into the thigh in the usual manner, when the patient is unable to take it internally.

In the great majority of cases, as I have already stated, no other treatment is required than splints, to keep the joint quiet, and the putting the system under the influence of mercury first, and of sarsaparilla afterward; and it is only if these remedies prove to be not sufficient that recourse need be had to caustic issues. *Med. Gaz., March* 20, 1846, *p.* 489.

[In speaking of the "morbid alteration of structure of the synovial membrane," Sir Benjamin observes:]

There is a curious condition of the synovial membrane in which it seems to have undergone a peculiar morbid alteration of structure. It is thickened in various degrees, sometimes to the extent of an inch and a half, having assumed a sort of pulpy structure intersected by white membranous bands. In some instances there is a preternatural vascularity, and vessels injected with blood are seen ramifying in it to a considerable extent. In other cases no increased vascularity is perceptible. There is little doubt that in some cases this is the result of long-continued chronic inflammation; but in

others I am led to believe that it takes place independently of inflammatory action.

[The disease may progress for some time, even years, without any other symptoms.]

As it has advanced to the layer of the synovial membrane, which is reflected over the cartilage, the latter has begun to ulcerate, the ulceration being marked, as on other occasions, by aggravation of pain and startings of the limb at night. At this stage of the disease, small abscesses form in the substance of the diseased synovial membrane. These gradually make their way to the surface, one coming in one place, and another in another, discharging a very small quantity of matter.

When the cartilages are thus ulcerated, the matter is formed in the joint, and perhaps in the substance of the synovial membrane also, the patient's health begins to be affected, as in other cases of articular abscesses, and at this period nothing can be done for him but to amputate the limb. Can any remedial means be employed with success in the early stage of the disease? I used to think *not*, and that is the opinion I have published in my work on Diseases of the Joints. It was my belief that it was a disease not under the control of art: I had indeed seen both local applications and constitutional treatment employed without any good result whatever. But I am not satisfied that this opinion was correct.

[Sir Benjamin here relates a case in which he had an opportunity of watching the progress of this disease for some years. The patient had no pain in the joint, yet it was swollen, the swelling being more prominent in some parts than others. With respect to its treatment, he observes:]

I first of all applied pressure by means of several alternate layers of diachylon plaster and bandage, and this was kept up for a considerable time; afterward recourse was had to leather splints, secured by a firm bandage, so as to keep the joint fixed at the same time that moderate pressure was made upon it. Constitutional treatment was not neglected.

[This plan was adopted for several years, and the patient gradually recovered, with an anchylosed knee, however. Sir B. Brodie considers the affection to be of rare occurrence: he then speaks of loose cartilages in the knee, and says:]

These cartilages may be removed by an operation, which I have performed several times. In some instances no inflammation followed the operation, in others a great deal. In one case which came under my observation, under the care of the late Mr. Jeffreys, suppuration followed, with a great deal of mischief, and the patient ultimately lost his limb. I suspect, however, when such ill consequences ensue, that very frequently it is the fault of the surgeon. The operation requires to be performed with the greatest caution. Get the cartilage fixed over the outer or inner condyle of the femur, and there let it be held, either by yourself or an assistant, to prevent it slipping into the joint. The skin, the cellular membrane, the fascia, the ligaments, and the synovial membrane, must be slowly divided one after the other; the knife being held with a light hand, as otherwise the cartilage will be pressed into the joint, and you will not be able to extract it. Having divided the parts carefully, and made room for the cartilage to escape through the synovial membrane, take hold of it with a tenaculum, or some other sharp-pointed instrument, withdraw it, and bring the edges of the wound together. If the cartilage should slip away, never grope for it, but bring the edges of the wound together, and no harm will happen, and there will be nothing to hinder the operation being performed on some other opportunity.

It has been supposed that an improvement might be made in this operation, by making a valvular opening; that is, by introducing a narrow sharp-pointed bistoury, puncturing the skin at some little distance, and then dividing the fascia and other parts down to the cartilage, on the principle of the subcutaneous operation performed for the division of tendons.

I do not myself see why this method should be preferable to the other; it is not the wound of the skin, but that of the synovial membrane, that makes the danger; and I am satisfied from what I have seen that a principal source of danger is the anxiety of the surgeon to finish the operation, which leads him to grope for the cartilage in the joint when it happens to have slipped away from the wound, instead of waiting for a future day.

*Med. Gaz., April* 10, 1846, *p.* 623.

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104.—ON INFLAMMATION OF THE HIP-JOINT.—By Dr. O'Ferrall.

[John Thompson, a young man, nineteen years of age, was under treatment in Dr. O'Ferrall's wards last year for disease of the hip-joint. The test proposed by Dr. O'Ferrall, as a means of diagnosing between hip-joint disease and other affections resembling it, was made use of, and it was found that when adduction and abduction of the affected limb was made, the entire pelvis moved, forming an angular lever, whose fulcrum was the acetabulum of the opposite side. On disease in this locality, Dr. O'Ferrall remarks:]

When a hip-joint case is brought under our notice, it is of great practical importance to determine its probable duration, before the period at which we are consulted; for the success of the mercurial treatment will depend much on this question. In Thompson's case, the nates of the affected side drooped, as in cases of some standing; but when he was laid on his face, and the muscles of both nates were equally at rest, there was no remarkable loss of bulk in the muscles themselves. The measurement of the thigh of the affected side, showed also a circumference equal to that of the sound one. There could be no doubt, then, that the case was comparatively recent, for the characteristic wasting, which belongs to disuse, had not yet been established. It might be thought that the history of the case would be sufficient to determine this point. Nothing could be more fallacious. The practitioner who suffers himself to be led, in this matter, by the history laid before him, and without testing its probability by the actual phenomena of the case, will have reason to regret his want of self-reliance.

[In another case, a young gentleman, whilst hunting, in crossing a hedge, his left foot was caught in a bramble, and forcibly everted; he experienced great pain in the hip, groin, and knee, and there was perceptible shortening of the limb of one inch.]

The diagnosis arrived at was—recent sprain of the hip-joint, previously in the state of morbus coxæ. This diagnosis, most startling and unpalatable to himself and friends, was grounded, 1st, on the constitution of an angular level by the pelvis and thigh bone, when the latter was moved; 2ndly, on the obliquity of the pelvis, which was certainly not of sudden occurrence; and, 3rdly, the fact of a remarkable wasting of the muscles of the entire limb.

[Dr. Colles was afterwards called to see the case, when he coincided with Dr. O'Ferrall's opinion. In two years the patient was quite well, but the limb was half an inch shorter than the opposite one. Dr. O'Ferrall remarks on these cases:]

In the one, the absence of wasting, marked the case as one of recent occurrence, and promising a recovery from antiphlogistic treatment. In the other, the presence of wasting, with obliquity of the pelvis enabled him to distinguish an actual case of morbus coxæ, when presented to him as an instance of recent accident only. The value of the mercurial treatment introduced by Dr. O'Beirne, is lessened by employing it in unsuitable cases. The diagnosis of stages, in joint diseases, is, therefore, of the utmost importance in practice.

*Dublin Hospital Gaz., Nov.* 1, 1845, *p.* 84.

**105.—THE KNEE-JOINT ANCHYLOSED AT A RIGHT ANGLE, RESTORED TO NEARLY STRAIGHT POSITION BY EXCISION OF A WEDGE-SHAPED PORTION OF BONE.—By GURDON BUCK, Esq., one of the Surgeons to the New-York Hospital.**

[The patient on whom Dr. Buck performed this operation was a healthy young farmer, twenty-two years of age. Seven years previously he had suffered from the blow of an axe, which grazed the bone over the inner condyle. Inflammation and suppuration of the joint took place, followed by anchylosis; the condyles of the femur projected prominently, and the patella was deeply imbedded between them. Several scars marked the parts from whence matter had been discharged, but the skin and subjacent tissues were healthy. The patient's health had been excellent since the injury. He was informed that the position of the limb could not be improved by any ordinary operation, but that it might, perhaps, by the extraordinary one of removing a wedge-shaped portion of bone from the extremity of the thigh-bone: he was made fully acquainted with the difficulty and danger of the operation. Dr. Buck speaks of the operation, which was performed on the 12th of October, 1844, as follows:]

Preparatory to the operation, the tendons of the biceps, semi-tendinosus, semi-membranosus and gracilis muscles had been divided five days before, in the usual manner, by two subcutaneous incisions, in doing which the peritoneal nerve was unintentionally cut across and was followed by numbness and pain extending to the foot; the punctures, however, had healed, and no inflammation remained in the ham.

The tourniquet having been applied to the upper part of the thigh, an incision was made from the outer to the inner condyle, across the middle of the patella, and a second incision from the middle of this, perpendicularly downwards to the tuberosity of the tibia. The included parts of integument were dissected down to a finger's breadth below, and parallel with the margin of the articular surface of the tibia. The ligamentum patellæ and the fibro-ligamentous tissues on either side were cut through on the same level to the extent of nearly two-thirds of the circumference of the bone. With the amputating saw a section of the tibia was made at three-fourths of an inch below the joint anteriorly and directed with a slight obliquity upwards, so as to terminate at the margin of the articular surface posteriorly. Two-thirds of this section was accomplished with the amputating saw. The second section was then commenced through the upper part of the patella, parallel with the first, and on a plane forming an angle with it less than a right angle, and continued to about the same extent as in the first section with the same saw. The remainder of the section through the tibia, as well as through the condyles, was completed with a metacarpal saw and chisels. The included wedge-shaped portion of bone being removed, it was found the section had not been carried far enough backwards, the posterior portion of the condyles still remaining consolidated with the tibia.

To include this a new section was undertaken, commencing upon the cut surface of the femur, three-fourths of an inch anterior to the angle at which the sections already made met, and directed backwards and upwards on a plane more oblique in reference to the axis of the femur. This new section being removed, the remaining points of connection were ruptured by cautiously flexing the leg on the thigh, after which the irregular prominences were pared away with the bone forceps. An attempt was now made to extend the leg upon the thigh, when it was found that the bony surfaces could only be brought to within a finger's breadth of each other anteriorly. The soft parts in the ham being rendered tense and opposing great resistance to the extension, the attachments of the ligaments were dissected up posteriorly from the tibia while the leg was held in a state of extreme flexion, and, in addition to this, a further section of five-eighths of an inch thick was removed from the anterior two-thirds of the femur. The leg could now be

extended to the required degree with the bony surfaces in contact at every point, and the soft parts posterior to the joint in such a state of tension as to give steadiness and solidity to the coaptation.

The section of the condyles exceeding that of the tibia in its antero-posterior diameter, caused an overlapping in front of about half an inch. The hæmorrhage was very moderate, and only two ligatures were required to small branches given off by the popliteal trunk. The soft parts posterior to the joint and separating it from the artery were very little disturbed. The angular flaps of integument being redundant in the new position of the limb, were pared away to the required extent and secured in contact by seven sutures. The limb was then placed on an inclined plane with a slight angle at the knee, and after the patient was removed to his ward, adhesive straps were applied between the sutures and a compress of dry lint laid loosely over the whole. The operation, exclusive of the dressings, occupied forty minutes, and though very painful, was borne with remarkable fortitude.

[On the 23rd of October he was going on favorably, but there was considerable suffering from occasional twitches of the muscles, not confined to the limb, and two or three times they had attacked the bowels. Early in January the patient left his bed, the limb being supported with a suitable apparatus, the use of which was soon discontinued, a bandage only being applied. The bony union at the knee became very firm, the shortening being compensated for by a stirrup-shaped shoe. He was discharged on the 22nd of April, a few days previous to which he walked two miles with the aid of a cane only, and without pain or unusual fatigue.]

*American Jour. of Med. Science, Oct.*, 1845, *p.* 277.

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106.—EXCISION OF THE UPPER HEAD OF THE FEMUR IN A CASE OF MORBUS COXARIUS.—By Wm. Fergusson, Esq., Professor of Surgery in King's College, London.

[The patient was a youth fourteen years of age; admitted into hospital on the 20th of November, 1844. His general health had been good until the previous January, when he became affected with severe pain in the left groin, which did not yield at all to treatment. In three or four months' time his knee became affected, and finally an abscess formed which burst spontaneously; there were all the usual symptoms of hip-disease. Mr. Fergusson had for some time held the opinion that such circumstances are eligible for excision of the head of the femur. He observes that]

The head of the femur appeared to act as a foreign substance amongst the soft tissues of the hip;—there was no clear indication of serious disease in the cotyloid cavity, and it seemed as if the contiguous bones were healthy. The boy's lungs and other viscera appeared sound, and the head and upper portion of the bone seemed for the time the sole cause of his sufferings.

[In consultation with his colleagues the operation was decided upon, and it was performed as follows:]

A longitudinal opening about six inches long was made in the line of the femur, extending from over the head of the bone to a little below the trochanter major, and the tissues were separated from the shaft of the bone, a little below that process, so as to permit a curved needle to be used for the introduction of a chain saw. This latter step was attended with considerable difficulty owing to the depth and obliquity of the bone, and when accomplished proved of little value; for after several trials the instruments (which worked very indifferently in my hands) broke, and I was compelled to adopt another mode of procedure. With a sharp-pointed bistoury I separated all the soft parts from the neck of the bone and the trochanters, and then by causing the knee to be moved across the opposite thigh, and using the femur as a lever, the head and portion of the bone thus isolated was so

thrust out of the wound that I could with facility apply the ordinary saw for the requisite section. Not being satisfied with the condition of the interior of the bone at the surface exposed by the saw, I enlarged the opening, and removed about three quarters of an inch more, then closed the wound with a few points of interrupted suture, and covered it loosely with a pledget of lint. No vessel of sufficient magnitude to require a ligature was divided. The cotyloid cavity was filled by a fibro-gelatinous mass, similar to the lining of the sinus.

When the patient was placed in bed, a long splint was applied, with a view of keeping up gentle extension; and the limb, as far as the bent state of the knee would permit, was placed parallel with its fellow. The apparatus was somewhat similar to Boyer's long splint, but was so constructed that its upper end could be temporarily removed for the purpose of dressing the wound, and the fulcrum for extension, instead of being on the injured side, as when fracture of the neck of the femur is treated in this way, was taken from the other side of the pelvis.

There was scarcely any shock succeeding to the operation, and the chief complaint was pain in the knee, which for some days after, was more severe than at any previous period. The symptomatic fever was very slight, and disappeared entirely within the first ten days. Part of the wound united by the first intention, the rest soon discharged healthy pus, and speedily showed a disposition to heal. The health improved rapidly, the sweatings ceased, as also the pain in the knee, the appetite became natural, and the patient gained flesh. On the 8th of May, the limb having been for some weeks completely straightened, and the wound having almost closed, the splint was removed, and the patient permitted to move about the ward upon crutches. He has since continued to improve in strength; moves about without trouble or pain; and wears his clothes as if in perfect health.

The length of bone removed was four inches and a quarter, measured through the curve of the neck and shaft, and the limb is now about two inches and a half shorter than its fellow. The cartilage was almost entirely removed from the head of the bone, and the surface was in a state of ulceration. The trochanter and rest of the shaft seemed in a healthy condition, with the exception that the cancellated tissue was loaded with a dark-coloured fluid of an oily consistence, and seemingly mingled with imperfectly-formed pus. I am now doubtful whether this state of the interior was a morbid condition sufficient to necessitate the removal of the additional portion of bone.

[Mr. F. remarks that this is the second case of the kind in Britain, attended with a favourable result. The first occurred to Mr. Anthony White in the year 1818. It is said that Sir Benjamin Brodie has also removed the head of the femur; the late Mr. Hewson, of Dublin, also performed a similar operation: these cases both died. Sir Benjamin's in a few days, from the effects of the operation, and Mr. Hewson's three months after, from prosuppuration. These are the only cases in which this operation has been performed by British surgeons. Bourgery gives the names of ten surgeons in other parts of the world who have also performed it. Mr. Charles White, of Manchester, was the first who proposed the operation in 1769, and Mr. Anthony White first performed it in 1818. In this case of Mr. Fergusson's, on the third of October, 1845, the limb was quite straight; motion of the hip and knee is quite free, and the thigh can be elevated by the action of the psoas and iliacus internus; the lip is free from pain and the sinuses closed.]

*Medio-Chirurgical Transactions, Vol. 28, p. 571.*

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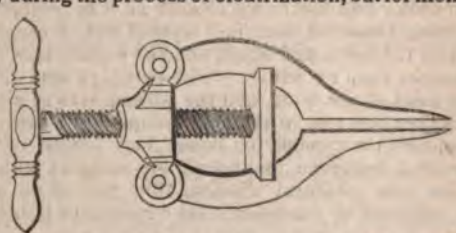
107.—IMMOBILITY OF THE LOWER JAW SUCCESSFULLY TREATED.—By T. P. TEALE, Esq., Leeds.

Two cases have been related by Dr. Brainard, in which he succeeded in restoring a considerable degree of mobility to the lower jaw, after it had

been lost from cicatrization upon severe ptyalism. The cicatrix on the right side was separated from the gums above and below, and the cheek detached freely from its adhesions; the firm ligament which extended between the jaws was then divided. The same process was repeated, to the requisite extent, on the left side. Strong efforts were now made to separate the jaws with the hands, but without success. Recourse was then had to a screw lever, by the aid of which the jaw was without difficulty depressed. The instrument employed for this purpose was constructed by adapting two small plates of steel to a common tourniquet divested of its band. Small blocks of wood were placed between the incisor teeth, in such a manner as to keep the mouth fully open during the whole process of cicatrization, being only moved to allow the patient to take food. The use of these blocks was afterwards gradually discontinued. After the lapse of twenty months, there was a space of three quarters of an inch between the incisor teeth, the speech was restored, the patient could take solid food, and the deformity was entirely removed. The second case was equally successful.

It is of the highest importance, in reference to this operation, to bear in mind the principle upon which its success depends, and which has been judiciously urged by Dr. Brainard. He regards the operation merely as a modification of the auto-plastic principle. When the mouth is pressed open, the cheek is made to supply the place of the lost substance; in this new situation it adheres to the gums leaving a portion of its substance free between the gums, and the upper and the lower jaws. My friend, Mr. Thomas, of Sheffield, has successfully adopted a similar plan of treatment in a case of immobility of the jaw, consequent upon mercurial phagedena. Mr. Thomas judiciously insists upon the necessity, in similar cases, of keeping up mechanical extension, not only during the process of cicatrization, but for months afterwards.



I have lately found a screw lever, of great use in the treatment of anchylosis of the jaw. The instrument was suggested by the tourniquet apparatus employed by Dr. Brainard, and was constructed for me by Mr. Gay, of Leeds. *Transactions of Provincial Medical and Surgical Association. Mr. Teale's Retrospective Address, p.* 101.

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108.—A PECULIAR CASE OF DISLOCATION OF THE FEMUR ON THE PUBES.—By Dr. GORDON.

[At a meeting of the Belfast Medical Society, in September last, Dr. Gordon read a paper on a peculiar case of dislocation of the pubes, which presented an anomaly very unusual. In all reported cases, the limb is described as everted—the toes can scarcely be made to turn inwards, as all the muscles attached to the femur counteract the inversion of the limb. Dr. Gordon remarks that:]

If we so place the neck of the femur upon the brim of the pelvis that the extremity would be inverted, and if at the same time we reflect on the action of the different muscles attached to the upper extremity and shaft of the femur, we shall find that the anterior fibres of the gluteus medius and minimus will elevate the thigh, but the posterior will act in producing eversion; the same condition will be induced by the psoas, iliacus, the adduc-

tors, and the other external rotators. Poupart's ligament and the inferior border of the internal, oblique, and transversalis muscles, may, by their pressure on the front of the head and neck, tend to produce inversion, but any action which they might exert would be too near the centre of motion, and would avail very little in counteracting the action of the numerous and powerful muscles just mentioned.

The semi-membranosus, semi-tendinosus, and the tensor vagina femoris muscles, will undoubtedly tend to produce inversion, but in the recent luxation the outward rotators would still preponderate, and would more than counterbalance any inward rotation which might be produced.

The peculiarities of this case are, I think, easily accounted for, if we first consider the situation occupied by the head and neck of the femur, and after this, the actions of the muscles upon it when so dislocated.

The situation of the femur was, as already described, as follows:—The lesser trochanter occupied the acetabulum; the root of the neck rested against the upper border of this cavity; the head projected above the brim of the pelvis, and the trochanter-major was external to the acetabulum. Place a healthy femur in this position, and we shall find that the limb will be everted; and, in addition to this, the fact of the tendon of the psoas muscle being situated between the brim of the pelvis and the posterior and inner part of the neck, will also lead us to suppose that there was a considerable eversion, as the tendon, so placed, would push the neck of the bone more forwards and outwards, and would consequently induce a greater degree of eversion.

The femur thus placed, was firmly retained in this position by the different muscles; in front, it was held against the brim of the pelvis by Poupart's ligament, and by the tendon of the rectus femoris, which lay imbedded in a deep groove in front of its neck, and also by the sartorius; behind it was held against acetabulum by the tendon of the psoas muscle, which had produced a deep groove on the brim of the pelvis. From this we observe that the femur, not only from its abnormal situation, but also from the mechanical pressure exercised upon it by some of the muscles, would be almost immoveable; now, as a consequence of this immobility, a great number of the muscles being unable to act would degenerate: hence, unquestionably, was induced the complete conversion into fat of the two glutei, obturator externus and internus, pyriformis, and gemelli muscles.

The limb was also much adducted, projected forwards, and, I may also add, everted (because we cannot place the healthy femur as here described, unless it be everted); a position very favourable to the action of the semi-tendinosus and semi-membranosus, not only as extensors of the thigh, but also as rotators inwards. The attachment of the outward rotators to the great trochanter, and the pressure of the tendon of the rectus femoris muscle upon the front of the neck, would prevent the femur, during rotation, describing a part of a circle, of which the radius would be represented by the length of the neck; before this could take place it would be necessary that these muscles should either be ruptured, or at least their tendinous substance much elongated; but the dissection showed that there was neither rupture nor elongation, but that the fibrous tissue belonging to these was tense, and the articular surfaces in contact like ligaments. Now, the force of rotation, produced by the semi-tendinosus and semi-membranosus muscles would thus be exerted upon the root of the neck of the femur, and by rotating this bone, as it were, upon its own axis, would gradually alter the natural position of the shaft to the neck, rolling it forwards and outwards.

This rolling forwards and outwards is not entirely confined to the junction of the neck with the shaft, for, if the upper extremity of the latter be attentively examined, we shall also find it somewhat twisted. If we reflect on all these circumstances, I think the conclusion is evident, viz., that owing to the situation of the femur, and the action of the muscles upon it when so placed, it was almost immoveable; that as a consequence of this

immobility, the greater number of the outward rotators degenerated into a fatty mass, as muscles usually do when unable to act; that the abduction and eversion of the limb, increased the influence of the semi-membranosus and semi-tendinosus as inward rotators, they, during each act of progression, also acted as inward rotators, and having lost their antagonists, the outward rotators gradually produced the inversion observed, and the rolling forwards of the neck upon the shaft of the femur. The great shortening of the extremity was evidently much increased by the pressure from above downwards, causing absorption of the upper and posterior part of the neck, and its descent upon the shaft when the patient used the limb in progression.

In this case we have a remarkable example of the efforts of nature in repairing an injury of so important a joint as that of the hip, by the formation of a strong and thick process for supporting the head and neck of the femur. The same reparative process is not alone confined to dislocations of the hip; we also observe a new socket formed around the head of the humerus when it is dislocated, either on the dorsum or venter of the scapula, and even when the lower extremity of this bone is luxated forwards upon those of the forearm. It seems as if the head of the bone, by its pressure on the surrounding soft parts caused condensation of those, and consequent on this condensation bony matter soon becomes deposited, and firmly attached to the neighbouring bone, forming a strong support to the dislocated extremity. But what appears more remarkable in this instance is, that the base of the new socket, or process, should extend so far backwards upon the iliac fossa; and if conjecture be allowable, we might say that nature continued to add deposit after deposit until she had formed a buttress, which would not only resist any impulse communicated by the femur, but would also bear an assault which would be more than sufficient to fracture this bone itself.

[Dr. Gordon then made the following observations on the reduction of this dislocation:]

The patient is to be placed on his side, and the pelvis fixed by means of a girth passed between the thighs, and fixed to a staple, a little before the line of the body; the leg is to be flexed upon the thigh, and the thigh upon the pelvis, as much as possible; a girth is now to be passed around the upper part of the thigh, at right angles to the axis of the body, and firmly fixed to another staple. This latter girth will serve as a fulcrum, and, by seizing the lower extremity of the femur, and by pushing it upwards and inwards, we shall cause the head of the femur to pass downwards and backwards towards the acetabulum.

*Dublin Hospital Gaz., Nov.* 1, 1845, *p.* 87.

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109.—CASE OF COMPOUND DISLOCATION OF THE ASTRAGALUS.—By S. Solly, Esq., F.R.S., &c.

[On the 4th of November, 1845, a labourer, æt. 42, of stout and muscular conformation, was admitted into St. Thomas' Hospital, under Mr. Green, with compound dislocation of the astragalus inwards.]

On examination the accident appeared of the nature of a compound dislocation of the tibia inwards, with fracture of the fibula. The foot was everted; the outer edge of the sole inclined upwards, the inner edge downwards. On the inner side of the foot there was a lacerated wound of the integuments, extending from below the internal malleolus, about three inches in length, forwards on to the instep. The integuments were contused and lacerated to a great degree on the outer side, the wound extending from above the outer malleolus across the foot to the metacarpal bone of the second toe, a large flap of skin having been torn up, and a deep chasm exposed beneath: on both sides the tendons were exposed. The anterior and

posterior tibial arteries were not injured, and their pulsation could be distinctly felt, though anteriorly only a narrow bridle of skin, about an inch and a half in width, was left between the two wounds, connecting the skin of the leg with that of the foot.

This was accomplished without any apparent difficulty, though it required great care to avoid the division of either the anterior or posterior tibial arteries. The inner malleolus, though not bare, projected through the wound on the inner side. On the outer side, the fibula, which was fractured about two inches above the external malleolus, was completely exposed. Reduction was attempted by Mr. Solly, who visited the man a short time after admission, but with no avail. On consultation between Mr. South, Mr. Mackmurdo, Mr. Solly, and Mr. Travers, it was determined that an attempt should be made to save the limb, to saw off the extremity of the tibia, and to reduce the dislocation.

For this purpose the man was placed upon the table; the wound on the inner side dilated, and the internal malleolus laid bare. The tendon of the flexor digitorum communis was drawn aside by a retractor; while that of the tibialis posticus being so much on the stretch as not to allow of retraction, was divided. At this stage it was discovered that the prominent projection of bone on the inner side was a portion of the astragalus, in natural connexion with the tibia, but separated from the os calcis and navicular bone. It was therefore determined to remove this bone, which was done, and the foot was then easily brought into its natural position. The integuments were now brought together by sutures, and strips of adhesive plaister; the patient sent to bed, and the limb confined in a swing-box.

[On the 11th there was inflammation of a low character about the wound, and affecting the absorbents; on the 22d, he was requested to have the limb removed, and Mr. Solly amputated the limb below the knee; a considerable amount of blood was lost during the operation.

Dec. 2.—The thigh much swollen, tongue red and tremulous, and protruded with difficulty. Next day an opening was made near the hip, aud three pints of unhealthy pus evacuated; stump appeared healthy. He gradually sunk and died on the 12th. Mr. Solly remarks on this case,]

This form of dislocation was new to me, and in weighing the arguments *pro* and *con* amputation, I did not put this into the balance. I candidly confess that if we had, I think it would have just turned it in favour of amputation of the limb; for the dissecting out of the astragalus from the socket of the tibia is certainly a more serious operation than sawing off the end of the tibia. It is true that the astragalus has been frequently removed in compound dislocations, and the patient recovered; but I think, on looking back to all the circumstances of this case, that it added so much to the already extensive injury of the soft parts, that if a similar case were to come before me, I should not be tempted to try by such means to save the limb.

I would, indeed, advise you, in any analogous case, where you might consider it necessary to remove the astragalus, or saw off the end of the tibia, in order to return the bones to their place, never to make a fresh incision to effect it, if you have already an extensive wound in another direction. If you cannot remove the astragalus without so doing, then to remove the whole leg in preference. In the case we have just been considering, there was an extensive lacerated wound on the outside of the foot; but this wound was not in a direction to admit of either the removal of the base of the tibia through it, or the astragalus; and though there was a wound on the inner side, still this wound did not communicate with either of the above-mentioned bones. In order to extract the astragalus, it was necessary to carry this wound down to them, which most undoubtedly added much to the previous injury, and danger of constitutional irritation.

I have remarked, that in those cases in which the astragalus has been successfully removed, it has been removed rather through an original wound,

or a dilatation of the original one, or in cases of simple dislocation, where of course only one wound need be made for the purpose.

[A practical point involved in accidents such as this, is the question of primary or secondary amputation. Mr. S. remarks:]

In this individual case I must say that I think the man would have had a much better chance of recovery if the leg had been amputated in the first instance instead of removing the astragalus, and waiting. My reason for thinking so is the power of reparation which was exhibited in the wounds of the foot, the way in which the sloughs were thrown off, and the healthy granulations that sprung up, and considering the amount of injury, the slight constitutional irritation which arose; and if all this went on favorably with such extensive injuries, can we doubt, with a simple amputation of the leg, that there would not have been less suppuration and less constitutional irritation?

[The late Mr. Colles, of Dublin, was very much opposed to amputation for compound dislocation of the ankle; he made the following remarks on this subject:]

The man to whom I was pupil was very fond of amputation of every kind of compound fracture, and he operated as well and as dexterously as any man I ever saw, yet I never saw a patient on whom he operated for this kind of case, that did not die in consequence—every one of them—they got sickness of the stomach, which never left them; a tumid abdomen, &c. All the experience I have had goes to show the ill tendency of early amputation in compound fractures.

If you must amputate, wait at least until the symptomatic fever has subsided. If there is a necessity to amputate after hectic fever has set in, which, as I have already said, may occur, the hectic will immediately subside after the operation, provided the fever be not owing more to constitutional than local causes. A man, who is in perfect health the moment before he met with an accident, and from which he got a severe shock, is not a fit subject for an immediate operation.—*Med. Gaz. Feb.* 13, 1845, *p.* 265.

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### 110.—THE PULLIES IN DISLOCATION.

Mr. Terrey, in the Provincial Medical Journal, recommends when the pullies are used to reduce a dislocation, instead of using extension by the hands of assistants, that a little wheel, called a click-wheel by whitesmiths, be affixed to the wall, and the rope attached to it. One hand turning the wheel, will, he says, do more than six or eight pulling the rope. The little ketch or stop, which is an important part of the instrument, keeps up the stretch, and by a close arrangement of the notches round the circumference of the wheel, a gradual and regular increase of extension, even down to so little as the sixth or eighth of an inch at a time may be made.—*Med. Times, Dec.* 13, 1846, *p.* 241.

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## AMPUTATIONS.

### 111.—ON AMPUTATION AT THE MIDDLE OF THE LEG.—By J. A. Lawrie, M.D., Surgeon to the Royal Infirmary, Glasgow.

[In 1842, Sir H. Hardinge addressed a letter to Dr. Lawrie, wishing him to give the result of his experience on the comparative advantages of amputations at the middle of the leg, so as to enable patients to use the knee-joint; and those immediately below the knee, the patients walking by resting the bent knee upon a wooden pin. He wished to know their comparative activity and power of labour, and which operation was most satisfactory to the men themselves, and how soon, after the limb has healed, in each

case, it is fit for use. In reply, Dr. Lawrie gives a number of cases in which both operations were performed, and then proceeds to compare the relative advantages of the high and low operation. He says]

The two operations may be compared, 1st, As to their immediate, and, 2nd, As to their ultimate results.

1st. The low operation is less fatal than the high. The Statistics of Amputations in the Glasgow Infirmary show, that of all our amputations "for disease," that immediately below the knee is the most fatal. I am not in possession of a sufficient number of cases of low amputation to be able to say statistically what is its rate of mortality; but this much I can say, that I am not aware of a single instance in which it has proved fatal in Glasgow. I have no doubt there have been fatal cases, but I feel certain that they are few in number, and none have fallen under my own observation.

On this point the table at p. 67 of MM. Arnat and Martin's memoir is very valuable, as showing the low mortality at Paris to be little more than one in ten.

Supposing, then, that its ultimate advantages should be found to be equal, or even somewhat inferior to those of the high operation, the comparatively great mortality which attends the latter, justifies me in saying that it "ought to be abandoned," and the former substituted for it.

2nd. It is less painful, and more easily performed. It is less painful, because the thickness of muscle and of bone to be cut is less; and for the same reason it is more easily performed, and makes a better operation. But to this last point I shall return, under the head of "The Method of Performing the Operation."

3rd. I feel confident that the smaller amount of wound will insure a more speedy and less painful cure in the low than in the high operation.

*The Ultimate Results of the Two Operations.*—1st. The important difference between the two is, that the one insures the use of the knee-joint, the other does not, or, at all evenis, it is not intended to insure it, and at best does so imperfectly. There can be no doubt that this, *per se*, is a vast advantage. Of the cases detailed, there is not one, the subject of which did not admit that it would be of great consequence if the knee-joint could be made available. The whole question then resolves itself into the means we possess of enabling the patient to "avail" himself of the joint thus preserved to him, and a comparison between these means and those employed for the high operation.

The mechanical contrivances for insuring the use of the knee-joint hitherto used in Glasgow are the following:

1st. The short pin with a knee-strap, without a thigh piece. Lowest price, 15s.

2nd. The above slightly modified. Lowest price, 15s.

3rd. Either of the above with a short thigh-piece. Lowest price, 18s.

4th. The above with a long thigh-piece, the principal point of support being the tuberosity of the ischium. Lowest price, 20s.

5th. Any of the above pins, with the addition of an artificial foot and leg.

We may divide the patients by whom these apparatuses may be required into the following classes:

1st. All females.

2nd. Wealthy or independent men.

3rd. Men not occupied at very hard labour, and in lifting heavy weights.

4th. Labourers engaged in severe toil, and employed in lifting heavy weights.

Let us uow inquire how our mechanical contrivances will suit the necessities of these several classes?

1st. *All Females.*—I do not recollect to have seen but one female who would use the common pin with the bent knee. She was a coal-porter, and seemed capable of great fatigue. With this exception, all the females, of

whatever rank, whom I have met with, have refused to use the common pin, and preferred the crutch. To females, then, the low operation, and any one of the above apparatus, is a vast boon; and as they can employ themselves at sedentary or light work, the simplest of the pins or limbs will suffice. Jean Eccles, Case 3, walked remarkably well with No. 1. Miss M'F. and Mrs. M'F., Cases 17 and 13, on the same model, with the addition of an artificial foot and leg; and Christian Blair, Case 18, on model No. 3. The first and last of these are, in point of price, within the reach of the poorest patients: and I cannot avoid saying, that I should reckon any future operator guilty of an act of cruelty who would perform the high operation on any female patient if it could be avoided. The statistics alluded to show that the number of females who undergo amputations is to males as 1 to 3½, thus removing at least one-fifth of the cases in which there may be a choice between the high and low operation, from the high, and assign them, without cavil, to the low.

2nd. *Healthy or independent men.*—I believe this class will universally prefer the low operation, with an artificial foot and leg fitted to one or other of the above models. I should recommend model No. 2, with a long thigh-piece, as the best. This, properly fitted, will enable the wearer to take any amount of fatigue, and to enjoy any amusement on foot or on horseback, which he may choose to pursue.

3rd. *Men not occupied at very hard labour, and in lifting very heavy weights.*—I have not met with a single instance, with the exception of Robert Rankin (if indeed he be in this an exception) where the patient did not admit that the low amputation, and some one of the above apparatus, was a great improvement on the high operation and the bent knee. This feeling was so universal that it is unnecessary to adduce instances. They all admitted that the simplest of the models would enable its wearer to do any kind of light work.

[A few of the patients whose cases are recorded by Dr. Lawrie seem to think that the high operation would have been preferable, whilst the majority consider the short pin with a thigh-piece the best adapted of any for hard labour. This apparatus, too, is very cheap. In speaking of the way in which it affords support, Dr. Lawrie observes:]

This apparatus gives three points of rest: 1st, Below the knee; 2nd, Above the knee: and 3rd, At the top of the thigh. The weight of the body may either be divided between them, or thrown on the thigh, if the stump be tender. Indeed, in this latter case, the stump may be perfectly loose in the box, and be only used in binding and extending the knee-joint in walking.

*Advantages of the Operation immediately below the Knee, and of the Pin, for the Bent Knee.*—The advantages of this operation are, that it allows the patient to use an apparatus so simple, that the majority of the poorer class can make it at a small cost for themselves. The bent knee is not liable to be excoriated except after much walking, and the wearer of the apparatus can undergo a great deal of fatigue. These, undoubtedly, are immense advantages, but are they not counterbalanced by the great fatality of the operation, and the loss of the motions of the knee-joint?

*Methods of performing the Operation.*—I believe that almost all surgeons will admit, that a good method of operating immediately below the knee is still a desideratum. The great thickness of muscle behind makes the single flap operation objectionable; the double flap is from the same cause a bad operation; and the double circular, although (as appears to me) the best, is apt to leave a puckered, contracted stump. These objections do not apply with the same force to the anterior and posterior flap operation, or to the double circular when performed below the middle of the leg; the reason is to be found in the form of the limb at that spot.

The two best methods of operating are the double circular and anterior-posterior flap operations. It is unnecessary to enter upon the comparative

merits of the two. Whichever is performed, great care should be taken to leave sufficient skin and muscle to cover the ends of the bones. There must be no dragging of the soft parts immediately after the operation; and no adhesion of the integuments to the ends of the bones after the cure has been completed.

In performing the anterior and posterior flap operation, the posterior flap should exceed in breadth at its base one diameter of the limb, and be fully one diameter in length. The anterior flap, composed only of skin, should be at least half a diameter in length. The projecting ridge of the tibia should be pretty deeply sawn off in a slanting direction. If the limb should be removed so low that the tendo Achillis forms part of the posterior flap, it should be cut off with one sweep of the amputating knife, before the stump is dressed. If care be taken to avoid interfering with the nerves, this additional step in the operation will cause very little pain.

One very important question on this part of the subject is, at what point should the bone be sawn, or, in other words, how long should the stump be? I have already endeavored to prove, that the low operation is by much the less fatal; and I believe I may say in general terms, that *ceteris paribus*, the nearer the ankle, the less is the danger. Some apparatus-makers object to very long stumps, as being inconvenient for fitting on artificial limbs, or even the short pin. As a general rule, I should recommend the middle of the leg, or immediately below it, as the best point at which the bones can be sawn.

I would caution operators from incurring any risk of leaving disease, encroaching on unsound skin, leaving too little skin, or too short flaps, from a desire to have a long stump; as any one of these errors would more than counterbalance the advantage arising from a long stump. Some of the above cases prove that a long stump is not necessary to secure the use of the knee-joint.

The case of John Rankin, William Black, Mr. J., and others, are instances of amputation above the middle of the leg. The stumps are sufficiently short to suit the old pin, while they are long enough to give the free use of the knee-joint, and admit of the adaptation of artificial limbs. I confess I was not prepared to find short stumps so very useful.

I would farther caution operators from allowing stumps to become bent backwards during the process of cure, even although they should be short, and apparently only suited for walking on the bent knee. If the motion of the joint be preserved, the joint may still be used, and admit of the adaptation of any of the forms of apparatus usually employed.

*Monthly Jour. of Med. Science, March* 1846, *p.* 166.

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112.—PREVENTION OF VENOUS HÆMORRHAGE DURING AMPUTATION.—By Dr. HANNAY, Surgeon to the Glasgow Royal Infirmary.

[The occurrence of venous hæmorrhage in amputations, is in some cases attended with the most serious results. Dr. Hannay considers the tourniquet as rather favouring than preventing venous hæmorrhage, and he recommends the application of a skilful and experienced hand, where practicable. Dr. H. also adopts another mode of preventing this hæmorrhage.]

It is the application of a roller or bandage, very equally and neatly, very firmly and perfectly, so as to compress, with all bearable firmness, the limb from its very extremity up as high as the points of amputation will admit. I had often seen, and those who do not employ this bandage will yet have an opportunity of observing, that the veins of the portion amputated are pouring out blood most copiously, often doubling I believe the quantity of blood lost; which I aver will always be saved by a tight and well-applied bandage. I may perhaps over-estimate the power of the precautionary procedure I now recommend. I cannot over-estimate, however, the end

which it aims at; viz., saving the patient's blood in many cases of amputation of the extremities; to the effectual attainment of which, it is my honest conviction, the measure now advised will very powerfully contribute: conjoined with skilful manual pressure (in place of the tourniquet), it will prove as effectual as the nature of things will admit. The roller must, to be serviceable, be applied carefully and exactly, carried up the limb from its extremity with perfect equality of pressure. I usually apply it immediately before the operation, and when the limb can, without much inconvenience, be lifted up above the level of the body, whereby the veins may be kept, during its application, in as empty a state as possible, I cause it to be held in that position when applying the bandage.

There has occurred to my mind one objection to the practice in question, and I admit that in some cases there may be some weight attached to that objection. When the limb to be amputated is inflamed, and consequently very painful, it can ill bear sufficient tightness of the bandage; and I have seen the roller occasion considerable distress in a few cases; but I hold that the inestimable advantage of saving blood secured by the bandage more than outweighs the above objection, which, moreover, is speedily removed by the amputation. *Med. Gaz., Nov.* 21, 1845, *p.* 1279.

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113.—HINT ON DISSECTING BACK THE SKIN IN CIRCULAR AMPUTATIONS.—By Dr. Hannay.

[The most painful and tedious part of circular amputations is the dissecting back the skin to form a sufficient covering to the stump. Dr. Hannay recommends that an assistant should dissect back the skin on one side while the operator does that of the other, and thereby shorten materially that most painful and unseemly part of the operation.]

*Ibid, Nov.* 21, 1845, *p.* 1208.

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114.—USE OF SUTURES AFTER AMPUTATION.—By Dr. Hannay.

Whenever stitches are put in the edges of flaps that are rather short, and so made to effect a stretching or dragging of the parts, they are inevitably mischievous.

I therefore offer it as the result of my observation, that when a flap is of sufficient length to meet without the least dragging or stretching, then and there are stitches beneficial, and seldom to be omitted; but on the other hand, if the flaps be scanty, and if the employment of a stitch would keep them on the stretch in the least degree, then will they prove mischievous, and should not be employed. I need hardly say, that the introduction of the stitch through the muscular structure of the flap is never admissible. I am pretty sure that I once saw a stitch which was introduced so as to pass through that tissue produce the most serious evils.

But in this and in all other stumps, the approximation of the lips (by stitches), will depend upon the laxness of the skin, and the quantity preserved by an artful double incision; for the skin must not be drawn together so tight as to put it upon the stretch, lest it should bring on an inflammation and pain. *Ibid, Nov.* 21, 1845, *p.* 1281.

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115.—USE OF AN OPIATE BEFORE THE FIRST DRESSING AFTER AMPUTATION.—By Dr. Hannay.

[Dr. Hannay recommends a large dose of laudanum (30 or 40 minims), to be given before the first dressing after amputation, particularly of a large *extremity*. There is no doubt the shock to the nervous system is very *great, and we should* endeavour by every means to alleviate it.]

The administration of it before the dressing insures the anodyne effects of the opiate much sooner after the dressing, and probably shortens, as well as mitigates, the distress occasioned by the process, as well as its depressing effects on the œconomy. My observation of the good effects of the practice, leads me to have recourse to it in the first few dressings after amputation of the large members in every instance; and respectfully to recommend its adoption from the benefit and comfort it secures to the sufferer. The anodyne should, to derive all the benefit it is capable of securing, be given fully half an hour before the dressing be proceeded with.

*Ibid, Nov.* 21, 1845, *p.* 1281.

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116.—EXCISION OF THE HEAD OF THE HUMERUS.—By Dr. STRATTON, Canada.

[Dr. Stratton, in a letter to Sir George Ballinghall, describes an interesting case of excision of the head of the humerus: his patient, an Indian boy, about six years of age, received the contents of a musket, loaded with swan shot, in his left arm, he being at the time about six feet from its muzzle.]

August 16. At first sight the wound appears to extend along the outer side of the arm from the shoulder to the elbow, but on re-applying a flap two inches long at its lower extremity, the wound is reduced to four and a half square inches. In the upper half of the arm, the soft parts are much injured, part of them seem to have been shot away, and in the margin of the wound there are several shot-holes in the integuments; two inches of the shaft of the humerus is destroyed; there is a thin glairy discharge from the upper part of the wound; a part of the shaft of the humerus two inches long, and several other loose pieces of bone were removed, and also a quantity of moss which the Indians had applied to stop the bleeding, which they say was not great at the time of the accident. There is but little constitutional disturbance; the skin is cool, the tongue moist, and the appetite moderate. To take castor oil, and a cloth dipped in cold water to be applied over the wound.

17. With the aid of Dr. Nicolson I proceeded to remove the head of the humerus. The patient was laid on a table with his left shoulder projecting over its edge. Of the lower part of the humerus the projecting extremity had been broken very obliquely, and on bending the arm at the wound, this sharp and almost pointed end was removed, partly with a saw, and then with the nippers. I then took hold of the lower extremity of the upper part of the humerus, and with a small double-edged scalpel cut along it upwards towards its head, from the side of which a small splinter was removed. The head was then turned out of the socket by using the scalpel around it, and turning the other end towards the chest; the part thus removed measured two inches; no vessels required to be tied. Search was made in the soft parts for any pieces of bone that might have been driven in by the shot; lint wet with water, was for the day put in the socket, the softs parts were adjusted so as to make the breach as small as possible; with a sling the elbow was raised up so as to aid nature in shortening the arm, in order that the loss of bone might be less felt; a single turn of a bandage confined the arm to the side, and a cloth dipped in cold water was applied over the wound.

[In one hundred and twelve days after the operation the wound was closed, the left arm a little shorter than the right, and could be elevated nearly as high as he could raise the elbow. On the 28th of April, eight months after the operation, he could use the left arm as well as the right, but could not elevate it quite as high: its motions were free, and he could use it with ease in lifting weights. The left shoulder was a little flattened, which was quite concealed by his dress.]

*Edinburgh Med. and Surg. Jour., Jan.*, 1846, *p.* 31.

### 117.—AMPUTATION OF A FINGER BY A NEW METHOD.

A robust man had a deep-seated suppuration of the middle finger, with necrosis of its phalanx. The removal of the finger at the phalango-carpal articulation became necessary. M. Robert performed the operation in the following manner:—He first made a longitudinal incision along the dorsal aspect of the articulation, extending from the prominence of the joint to about the middle of the first phalanx, in the direction of the axis of the finger; then turning the bistoury towards the radial side, he made a natural flap which he cut, with a single sweep from below upwards, to the articulation; opened the latter, disarticulated the phalanx, passed the knife behind it, and cut the other flap in the usual manner. Two very long flaps were thus formed, covering entirely the head of the metacarpal bone, and affording the thickest possible cushion. Another patient operated on in the same way by M. Robert, and now cured, allows us to judge of the effect of this mode of operating. The stump has a fuller and softer covering than by the ordinary mode of operating. It is readily seen, indeed, that by merely cutting two flaps by a double oblique or elliptical incision, which unite in the form of an angle on the top of the articulation, soft parts can scarcely be found to cover the head of the metatarsal bone, while on the other hand, if a longitudinal incision be first made, and then the two flaps from the middle of the phalanx, there is much more material for a stump. It is true that the operation is less rapidly done, and is less brilliant than the other, but this is of no consequence, since the result is better. M. Denonvilliers had just amputated an index finger, very much after the same plan as that which M. Robert had pursued for a long time, and which M. Lisfranc formerly recommended in his lectures. M. Denonvilliers informs us that he adopts in all cases of oval amputations the same plan; that is, instead of commencing by marking out the angular shape of the flaps, he makes at first a simple longitudinal incision, which serves as a starting point for both flaps.—*Annales Therapeutique Medical. et Chirurg.*, October, 1844. *Dublin Hospital Gaz., Feb.* 1, 1846, *p.* 189.

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### 118.—ON EXSECTION OF THE LOWER JAW FOR OSTEO-SARCOMA.—By VALENTINE MOTT, M.D., New-York, United States.

[In a letter to Mr. Liston, published in the London Medical Gazette for March 20th, Dr. Mott claims for America, originality in this operation. He declares he never heard of its being done any where for this affection when he first performed it, as many surgeons in New-York can testify. He says,]

Far be it from me to presume to say, that other surgeons may not have thought of the same expedients, and since performed the same operation, without the least knowledge of what had been done by me. Of one thing, however, I am certain, that an eminent surgeon, now in Paris, informed me that he took the printed sheets of my first case with him to Paris, and told M. Dupuytren of them; he (Dupuytren) requested a translation to be made, stating that in a few days he would give a clinique upon that subject. The translation was made by my friend, and handed to Dupuytren. He gave his lecture with my case in his hand, but made no allusion to it. My firm belief therefore is, that my operation for osteo-sarcoma was performed before those of this eminent surgeon.

Some two or three years after the publication of my first case, I read an account of several cases which were operated upon by my friend, Dr. Cusack, of Dublin. Knowing as I do personally that distinguished surgeon, it never occurred to me to say anything in relation to this subject, in all our intercourse in Dublin and Paris. From whom he derived the idea, therefore, I know not; it may also have been original with him. This, however, can only be answered by Dr. Cusack himself. As you have stated in your

lectures published in the *Lancet*, that Dr. Cusack was the *first* to perform the operation of exsection of the lower jaw for osteo-sarcoma, I have felt constrained to make to you this statement in justice to myself.

My first operation was performed on the 17th of November, 1821, and is published at length, with plates, in the *New-York Medical and Physical Journal*, vol. i., p. 385.

Since that period I have performed this operation *seventeen times*. In three instances, the bone was removed at the temporo-maxillary articulation. In one of the cases the bone was sawn through at the first bicuspis tooth of the opposite sides.

All surgeons of reading or observation must be aware, that from time immemorial, either large portions, or even the totality of the lower jaw, have been removed or destroyed by violence, various accidents, and in latter times, by gun-shot wounds, fire-arms, &c. It has, also, long been familiarly known that partial or total destruction of the lower jaw has been spontaneously produced by the morbid processes of caries, necrosis, &c. Thus nature herself, in these latter cases particularly, pointing out as it were to the surgeon, from the perfect restoration to health that has succeeded to such disasters, that he himself might venture to follow in her footsteps.

For the great historical details we refer to Velpeau's Operative Surgery, head Exsections, vol. ii. Paris edition. 1839.

But, lastly, we repeat and aver, that the exsections of the lower jaw of even a fourth part, much less a half or two-thirds of it, for any form of sarcoma involving the whole texture of the bone, have never, in our opinion, been performed by any surgeon, past or present, but by myself, at the time above stated. The *onus probandi* to show that my claims are unfounded, rests with others. For my part I know of no record in existence now, nor did I know of any at the time I performed the operation, as I have already said, which can in the slightest degree militate against my pretensions.

[In the year 1804, Mr. Anthony White, surgeon to the Westminster Hospital, removed the whole of the left half of the lower jaw, for a fungous warty growth, extending from under the left ear to the symphysis of the chin.] *Med. Gaz., March* 20, 1846, *p.* 528.

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## ORGANS OF CIRCULATION.

### 119.—OBSERVATIONS ON THE TREATMENT OF ANEURISM BY COMPRESSION.—By Dr. Bellingham, Dublin.

[At a meeting of the Surgical Society of Dublin, in January, this year, Dr. Bellingham made some important observations on this subject. He had been making a post-mortem examination of a patient who had been treated for popliteal and femoral aneurism in opposite legs by compression. He exhibited to the society the preparations he had taken, and remarked:]

Upon a former occasion I laid down the proposition, that to cure an aneurism by compression, such an amount of pressure is never necessary as would cause inflammation and adhesion of the opposed surfaces of the vessel at the point compressed. An examination of the preparation upon the table fully bears out the correctness of this proposition, as we see the femoral artery upon each side to be pervious and uninjured down to the site of the original aneurismal sacs, at which points only its channel is obliterated.

I also laid down the proposition that it is not necessary to carry the pressure so far as completely to intercept the circulation in the artery at the point compressed, but that the consolidation of the aneurism will be more certainly brought about, by allowing a feeble current of blood to pass through the sac—in fact, that to apply compression successfully, the velo-

city and force of the current through the artery leading to the aneurism are to be diminished, while the amount of blood passing into the sac is to be lessened, by which the deposition of fibrine will be encouraged, until the sac no longer permits of the entrance of blood. A cure will then be effected in the manner in which nature, under the most favorable circumstances, brings about the spontaneous cure of aneurism.

There is a point connected with the employment of pressure in aneurism to which I have not before alluded, but which is illustrated by the dissection in the present case; it is that the mode in which compression effects the cure of aneurism seems to be more simple, and to require (if I may use the expression) less assistance from nature than ligature. For instance, when a ligature is placed upon an artery in the usual situation at a distance from the aneurismal sac, to prove effectual it must cause the obliteration of the vessel at the point to which it is applied: the blood contained in the sac, or that which finds its way into it by the anastomosing branches (as there is no *vis a tergo*) coagulates, and the main artery of the limb comes eventually to be obliterated both here and at the site of the ligature, whereas, after a cure by compression the artery is obliterated only at the seat of the aneurism. Indeed, for this reason the application of a second ligature higher up the artery, in cases where secondary hæmorrhage had occurred, almost necessarily fails, and we can hardly be surprised at gangrene attacking a limb, the main artery supplying which is obliterated at three points in its course.

In addition, the cure of an aneurism by compression is more likely to be effectual, and ought to be more permanent, than one treated by ligature; because in the former case the sac becomes gradually filled by fibrine, or the vessel leading from the sac is completely obstructed, and no longer permits of the passage of blood, although all pressure is removed; whereas, after the application of a ligature, a loose coagulum of blood alone remains in the sac, which does not fill it, and may or may not extend into the main artery; the parietes of the sac must therefore necessarily shrink considerably, and the artery supplying it must be closed up before the cure can be pronounced to be permanent. That this sometimes requires a long time to be effected, is shown by the pulsation having returned after a considerable interval, in cases where the ligature had been used.

The only objection which it appears to me can be urged with any fairness against the treatment of aneurism by pressure is, that it will probably prove more tedious than the ligature. Admitting this (although in several of the recorded cases it was less tedious), yet when we take into account its perfect safety, its almost absolute certainty; and on the other hand, the risk, the danger, and the uncertainty of the operation by ligature, particularly in the case of certain arteries, we cannot, I think, hesitate to give it the preference.

[A great objection to the treatment of aneurism by compression is the amount of pain caused by the pressure; but Dr. Bellingham describes an instrument by the use of which this inconvenience is avoided. He has made use of it, and his patient preferred it to every other mode.]

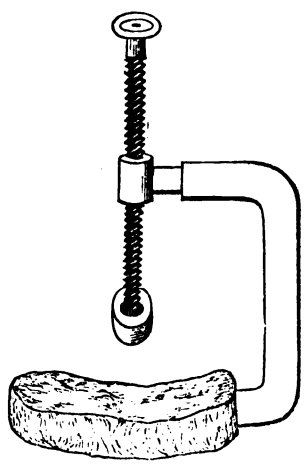
This consisted in a pad made of a piece of bandage rolled up, and laid upon the femoral artery as it passes over the ramus of the pubis, upon which a weight, sufficient to diminish materially, or to check the pulsation in the aneurism, was placed, and maintained in that position by the patient as he lay in bed, with the thigh flexed upon the pelvis. It was an accident which obliged me originally to have recourse to this proceeding, the instrument employed having gone out of order upon a Sunday, when there was no possibility of having it repaired, it occurred to me to try the effect of this simple means. A four pound weight was first used, this was subsequently changed for a seven pound weight, which was found to answer remarkably well. I mention it here, merely because the same mode of *applying* pressure is stated to have been employed with advantage in a case

reported some time subsequently in which no allusion is made to its having been used previously—an omission which I am sure was accidental on the part of the reporter of the case. *Dublin Medical Press, Jan.* 21, 1846, *p.* 35.

[In Mr. Teale's "Retrospective address," this interesting subject is again referred to, and an opportunity is taken of showing the kind of instrument by which the compression is made. Mr. Teale says:]

In several cases, the treatment was less tedious than the ordinary operation by ligature.

Through the courtesy of Dr. Bellingham, I am enabled to show a drawing of the compressor which he employs. It is a modification of a carpenter's clamp, and was invented by a patient under Dr. Harrison's care. It consists of an arc of steel, covered with leather, at one extremity of which is an oblong padded splint; the other extremity terminates in a nut, containing a quick screw, to which a pad, similar to that of a tourniquet, is attached. One of these instruments may be applied to the artery as it passes over the pubes; the other, of similar construction, but smaller size, is applied lower on the thigh, and may be also used for compressing the brachial artery. Dr. Bellingham informs me that so highly satisfactory has been the result of compression in Dublin, that no surgeon of that city would, in the present day, perform the operation of applying a ligature to the femoral artery for popliteal aneurism. He also adds, that since he adopted the plan of using two compressors, time is saved, and the patient is put to but little incovenience during the treatment.



In the absence of the usual compressing instrument, Dr. Bellingham, on one occasion, employed the following mode of making pressure upon the femoral artery, which the patient preferred to the use of the compressor. It consisted in the application of a weight of seven pounds, placed upon a pad previously laid over the artery at the groin, the patient lying upon the back, with the legs drawn up. This was found quite sufficient to stop the pulsation in the aneurism below. The pad was so placed that the weight merely required the patient's hand to be laid upon it to retain it in its place. Dr. Bellingham tells me that it gave the patient no pain at all, and that he was enabled to change his position without inconvenience.

*Trans. of the Prov. Med. and Surg. Association, N. S., Vol.* 2, *p.* 99.

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120.—CASE OF POPLITEAL ANEURISM CURED BY COMPRESSION OF THE ARTERIAL TRUNK ON THE CARDIAC SIDE OF THE TUMOUR WITH REMARKS.—By W. H. Porter, M. D., &c.

[This patient, a tailor, twenty-nine years of age was admitted into the Meath Hospital on the 3rd of December, 1844. He had always enjoyed excellent health. Six weeks before his admission into hospital, he had felt a stiffness of the thigh, and a pulsation in the right ham; there was a large pulsating tumour filling the whole popliteal space; it could be diminished by pressure, and a loud bruit de soufflet could be heard over every part of it. On the 6th, Dr. Porter applied pressure on the trunk of the femoral artery, acting in such a manner as to keep it up constantly and uninterruptedly. On the 6th of January, the tumour was hard, much less in size, and no longer pulsated, and Dr. P. saw the patient again on the 19th of July, 1845, when there was no tendency to a recurrence of the disease.

It may be urged against this method of treatment, that the process is a very tedious one; but it fairly admits of argument whether it will occupy longer than the management of a case by ligature. The patient certainly is exposed to much inconvenience, which Dr. Porter thinks ought not to be, unless for the purpose of avoiding something worse. In some able strictures on this method of treating aneurism, Dr. Porter observes:]

There is a remarkable condition of an artery which I do not recollect to have seen described, although it must be familiarly known, and doubtless has often been a source of perplexity to every operating surgeon: it is where it forms an abnormal but close adhesion to its adjacent structures, and particularly to its accompanying vein. Every surgeon in operating, must have observed that it was more difficult to detach from its connections and to denude an artery in some patients than in others; and the dissection of dead subjects will exhibit the same phenomenon, if carefully sought for; but in the latter case it is generally overlooked, either because attention has not been sufficiently directed to it, or that it may not have been regarded as practically important. I scarcely know whether this can be truly called a pathological condition of the artery, being in reality a product of disease. I am wholly uninformed as to its exciting cause, its progress, and its course; and it would only be a conjecture to attribute it to some species of chronic inflammation rendering the cellular coat of the artery thicker and shorter, and disposing it to contract close adhesion to every surrounding structure. However explained, the result is but too evident in many cases where arteries and veins lie in close juxtaposition, and become so mutually adherent as not to admit of separation even by the knife; or, as I have heard it forcibly expressed by a distinguished anatomist, "to possess but one and the same wall." This condition I was formerly in the habit of regarding as existing only between the popliteal artery and vein, where I had heard it spoken of, and seen it demonstrated by anatomists as the natural and ordinary state of the parts; but some years since I was led to modify that opinion by observing, in the dissection of a case of axillary aneurism, this very adhesion established between the subclavian artery and vein at the only point where the vessels came in contact, and where it must have proved a source of insurmountable embarrassment had an operation been attempted. I have since seen it in the axilla in the person of a cripple who had been obliged to use crutches for many years; its existence in the thigh is by no means unfrequent, and I believe it may occur between any artery and vein in the extremities, although, for reasons with which we are at present unacquainted, it prevails in some localities and some vessels more than others.

The femoral artery has probably been the subject of operation as often as all the other arteries of the body taken together: and at the place where it has usually been taken up, it is, in its anatomical relations, rather unfavorably situated, being in front of the vein, which it keeps out of the operator's view. This position of the parts has been constantly brought forward, in explanation of the frequency of the vein being wounded and partially included in the ligature, and the accident, as it was called, uniformly laid to the account of anatomical ignorance, or a want of sufficient surgical dexterity. But this very abnormal adhesion which I have alluded to exists with great frequency between these vessels, and, when it does so, it will furnish a more satisfactory explanation of the occurrence; for, under the circumstances, there is but one wall between them, and in any attempt to pass a needle around the artery, it must be pushed through the vein; the ligature, if tied, must include a portion of it, and occasion an inflammation, that, according to my observation, is certainly and uniformly fatal. Now, let us not, in our own vanity, assert that this is an instance of awkwardness on the part of the operator, and might be easily avoided; neither let us boast of our own individual success, which, after all, may be more justly attributable to the accident of not having met with a vessel in this diseased

condition. I have seen it happen so frequently, and in such hands, that I feel convinced there must be something more than accident, or ignorance, or carelessness, to occasion it. I know that it has been done by the most dexterous and best-informed men—surgeons constantly in the habit of performing bold and difficult operations, and who never, in other cases, were accused of *mal-addresse*. I once heard a surgeon, whilst in the act of performing the operation, speak of the occasional adhesion of the vessels, and adduce it as a reason why he should proceed with a more than ordinary degree of slowness and precaution, yet he passed his ligature through the vein notwithstanding, and eventually his patient died. I saw another, who, in passing his needle around the artery, obviously wounded the vein, for about a spoonful of very dark blood welled up from the bottom of the wound: he was aware of what he had done, withdrew the instrument, passed it higher up, and in the second attempt, actually included and tied a portion of the vein. Nay, I have been present when a lecturer, engaged in demonstrating the operation on the dead subject, and dwelling on the possibility of committing this unfortunate mistake (as he called it), practically fell into it himself by opening the vein: yet here were no cries or struggles to embarrass the operator, no impatience of suffering to occasion anxiety or haste, no blood to obscure his view, nothing to prevent him from calmly and quietly separating the vessels, except the one pathological fact, namely, that they were inseparable.

[The difficulties, however, attendant on this operation, are slight in comparison to the danger, even if we take into consideration one casualty only, viz., secondary hæmorrhage. Dr. Porter observes that the elements of this modern treatment have long ago been resorted to in practice, but not being understood, could not be brought into systematic and combined operation.]

It is familiarly known that blood withdrawn from the circulation of a healthy animal, possesses, in general, an uncontrollable tendency to become coagulated, and that it will assume that condition, unless interfered with by artificial means, nay, that it requires great and long continued disturbance, to the extent of breaking down and disorganizing the structure of the fluid, in order totally and effectually to prevent it. Now, the disturbance experienced by the blood contained within an aneurismal sac is occasioned, first, by the action of the heart throwing a wave of blood into it, and then by the reaction of the sac and its coverings returning a part of this back again into the circulation; and we know by experience that this quantum of disturbance is rarely sufficient to prevent coagulation completely, for a portion of the contents of almost every sac is more or less solidified. Again, the reaction of the coverings of the aneurism depends on their elasticity—a dead force, which requires to be acted on before it comes into operation, and, therefore, must bear a relation to the impulse that produces it, so that, if by any means the power with which the blood is thrown into the sac can be reduced, the power by which it is returned must be reduced also, and by so much will the fluid experience less disturbance, and be placed in a condition favourable to coagulation. Lastly, in proportion as the contents of the sac become solid will the impulse it receives, and, of course, its resiliency be weakened (an effect which we see in the feeble and undecided pulsation of old aneurisms): and thus it happens that, the coagulation of each portion of the blood increasing the facility of the remainder to assume a similar condition, the entire comes to be solidified. In this manner it is not difficult to understand how a sensible diminution of the force of the circulation, if maintained for a given time, can effect the cure of an aneurism, and why it may not be necessary totally to remove it, as used to be the case when the ligature was employed.

[Dr. Porter concludes that it is not necessary for the force of the heart's impulse to be taken away from the aneurismal sac, but only that it should be diminished. The question arises, to what extent this diminution should be carried. Dr. P. thinks it should be regulated according to the dimen-

sions of the tumour, the fluidity of its contents, and the disposition of the blood to coagulate and other circumstances of minor importance. He says:]

For my own part, I believe a very moderate degree of pressure, maintained throughout the entire progress of the case, will, in the majority of instances, be found sufficient; that which I employed was barely capable of communicating an impulse from the artery to the instrument, and causing it to vibrate gently in correspondence with the pulsations of the vessel. Under this the limb at first assumed a purplish hue, and, in the course of three or four days, became slightly œdematous, symptoms which, I confess, would have created some alarm, had I not had the advantage of witnessing some of the previously treated cases: it also occasioned pain in different parts of the limb, and this to such an extent in the case of Dr. Murray, as to induce him to abandon the treatment for a time, though with a firm resolution of recurring to it some future period. I can easily understand how the occurrence of such symptoms might awaken the most painful anxiety, and even lead to a discontinuance of the attempt. I can comprehend also how the trouble of attending such a case and regulating the clamps and screws, might decide a practitioner in declining to undertake it, but it should be recollected that we do not extol the practice as being simple and safe, and free from pain, and exempt from trouble; we only can compare it with another, and advocate it on the grounds of being more free from danger, more conservative of human life. I do not, then, pretend to measure the extent to which the compression might gradually be increased, or say how far it was carried by other practitioners, but in the cases I have detailed it never at any time was sufficient to arrest the circulation entirely, or cause the pulsation of the tumour to cease, until it ceased altogether and forever; neither can I conceive how more than a very gentle compression can ever be necessary, if the pathology of the case bears any analogy with, or resemblance to, that in which pulsation returns in the tumour after the artery has been taken up. In this latter case the degree of compression, whatever it may be, is applied at once, and remains afterwards unaltered, and the current of blood, whether it pass through its accustomed channel, or by the circuitous course of the collateral circulation, cannot be mechanically rendered weaker on one day than on the preceding; yet, eventually, under the gradual coagulation within the sac, the symptoms disappear and the disease is cured. Thus, we have satisfactory evidence that it never can be necessary to apply such a degree of pressure as would induce any really dangerous condition of the parts, even if it could be quietly endured, and we have also testimony that a very moderate one will be sufficient, in the interesting fact, that in a great number of our cases the regulation and management of the clamps and screws were, after a very short time, intrusted to the patients, who would not be very likely to inflict pain upon themselves, or enforce the remedy beyond that which could be easily endured. *Dublin Quarterly Jour. of Med. Science, May* 1846, *p.* 277.

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121.—TREATMENT OF POPLITEAL ANEURISM BY COMPRESSION.—By G. R. DARTNELL, Esq., Staff Surgeon, 1st Class, Fort Pitt, Chatham.

[A private soldier, 38 years of age, whilst walking across the barrack square, felt something give way in his left ham. It affected him so much, that he could scarcely walk to his room; was received into the hospital on the 5th of July. Three weeks after the occurrence took place, Mr. Dartnell describes his case thus:]

On admission here, a soft pulsating tumor, the size of a hen's egg, was found occupying the left popliteal space, subsiding under pressure, and returning gradually, with a whizzing sound synchronous with the systole of the ventricle; the heart's action appeared to be normal; there was

some œdema of the foot; and he complained of a sense of "beating" in the ham, and slight numbness of the leg and foot.

On the 3rd of August, two wooden clamps, with screw pads, were applied to the thigh, making pressure on the femoral artery, the one in the groin, the other in the lower third of the thigh (all bandages being previously removed), and the patient instructed to regulate the pressure of the pads according to his own feelings, relaxing one, and tightening the other as the pain from either became irksome.

[On the 7th of August, the aneurism was firmer and less in bulk and had ceased to pulsate. On the 10th, the tourniquet was removed, and a bandage applied over the tumour, and another over the femoral artery, to moderate the circulation through the vessel. On the 21st, the tumour had diminished one-half; his health good, but complains of occasional cramp in the calf of the leg. Mr. Dartnell remarks:]

The chief point of interest in this case (and for which alone it is offered to the profession), is the rapidity of the cure. The tourniquets were first applied on the 3d of August; and on the 10th (seventh day) were removed altogether. The pressure was not so great at any time as wholly to obstruct the current of blood through the femoral artery, nor was it sufficient to produce even the slightest abrasion of the cuticle. On the 15th day from the commencement of the treatment he was out of bed, and in little better than two and a half months he was able to resume his duties as a soldier. *Med. Gaz., March* 13, 1846, *p.* 464.

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122.—CASE OF POPLITEAL ANEURISM CURED BY COMPRESSION OF THE FEMORAL ARTERY.—By E. Greatrex, Esq., Surgeon, and W. T. C. Robinson, Esq., Assistant Surgeon of the Coldstream Guards.

[This patient, a private in the Coldstream Guards, whilst at quick drill in Hyde Park, was obliged to fall out of rank in consequence of a pain affecting him behind the right knee. On examination a large irregularly-shaped aneurism filled the popliteal space, pulsated strongly, and could be partially emptied by pressure. It was intended to tie the artery, as usual in such cases; but by Mr. Guthrie's advice, pressure was applied to the femoral artery; an additional inducement also was the prevalence of erysipelas in the hospital at the time.]

An instrument was made for the purpose by Mr. Weiss. It consisted of an Italian tourniquet, a broad short splint to fit the outer and back part of the thigh being substituted for one of the usual pads, as less likely to cause pain and sloughing.

It was first applied on the 18th of June, on the artery at about six inches below the fold of the groin, and the pulsation of the aneurism stopped; but on visiting him shortly afterwards it was found to beat again with unabated force, and this was the case over and over again, although the shape of the pad was changed, and various other little alterations tried.

He had now the ill luck to be attacked by modified small-pox, which, although slight, occasioned necessarily some relaxation in the treatment of the aneurism.

The same constant escape of the vessel from beneath the pad occurred until the 8th of July, notwithstanding pressure was made as strongly as he could bear it, or as was advisable for fear of sloughing. The knee then measured eighteen and three-quarter inches, and the tumour had become softer on the outer side, the pulsation and bellows-sound being very strong and loud. On the 8th of July, the plan was adopted of screwing the pad down firmly, and leaving him the key, so that he might, when the pain became intolerable, and "burning like a red-hot iron," to use his own words, relax the pressure by turning the screw for an instant or two, taking care always to apply his thumb or fingers with all his force on the artery just

above, in order that during these short but frequent intervals, the passage of the blood should be still retarded, if not stopped.

On the 9th of July this method was found to have been successful, the tumour was now perfectly solid, and no pulsation or bellows-sound has since been detected in it.

The instrument was kept applied as described, for nine days after the pulsation had ceased, to avoid any risk of the stream of blood again making its way into the aneurism: on the afternoon of the 18th of July, it was entirely removed, Mr. Stanley agreeing in the opinion that all danger had passed.

[In three months the tumour was very much diminished, and he could walk on crutches, and in three weeks afterwards he could put his heel to the ground.] *Medico Chirurgical Transactions, Vol. 28, p. 39.*

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123.—CASE OF PUNCTURED WOUND. AND LIGATURE OF THE POSTERIOR TIBIAL ARTERY.—By J. F. Arnott, Esq., F.R.S., Surgeon to the Middlesex Hospital.

[In a paper read before the Royal Medical and Chirurgical Society, by Mr. Arnott, on a case of a punctured wound of the posterior tibial artery, he spoke strongly of the necessity of tying wounded arteries near the seat of injury, whenever it is possible to do so, in order to prevent secondary hæmorrhage. He alluded to a case where the femoral was tied, and secondary hæmorrhage, amputation, and death were the result. M. Dupuytren recommended tying the femoral, but Mr. Guthrie deprecates the practice, and advises to cut down upon the wounded vessel, and secure it as near the seat of injury as possible. It appears from Mr. Arnott's paper, that a patient was admitted into the Middlesex Hospital in January, 1845, in whom it was evident that the posterior tibial artery was probably wounded. The wound was inflicted by a joiner's chisel.]

Mr. Arnott determined to cut down upon it at once, in order to secure both ends. For this purpose, taking the punctured wound as a centre, he made an incision through the skin and muscles of the calf, to the extent of six and a half inches; the deep fascia being thereby exposed, the opening in it made by the chisel was enlarged to the extent of two inches. After considerable difficulty from the bleeding, it was ascertained that, besides the wound in the posterior tibial, both venæ comites were divided. On account of the troublesome character of the bleeding from these veins, and the difficulty created in discovering the artery, one of them had a ligature placed on both ends, whilst the lower end of the other was subjected to pressure. Two ligatures were then placed on the artery, one above, the other below the puncture; it was not till the latter was tied that the hæmorrhage ceased. But little febrile disturbance followed the operation; the lower ligature on the artery came away on the eighth day, the upper on the ninth. During the night of the eleventh, some bleeding took place from the lower angle of the wound, which was not arrested by compression of the femoral artery, but which was easily checked by displacing some coagula from the wound, and making pressure at the lower part of it by means of a small compress lint, which was left in the wound. This was removed in three days, and the case proceeded subsequently uninterruptedly to a favourable termination. The wound cicatrized in less than two months, and the patient recovered with a perfectly efficient limb.

The incisions in this case were wholly within the limits of the calf, the external terminating seven inches above the ankle. The pain and spasm of the divided muscles from pressure in separating the sides of the wound during the operation were considerable, but the venous hæmorrhage occasioned the most delay.

Taking all circumstances into consideration, the author states, that it must

be allowed this mode of reaching the posterior tibial is an operation severe to the patient, and troublesome to the surgeon; but that on the other hand, when it is considered that the object of it is to save the limb and life; that by adopting it we take the most likely method of attaining this end, by putting in practice the most certain means of arresting arterial hæmorrhage; that from the evidence of the present case, no danger arises from the mere size of the wound in the calf, and no permanent detriment from the extensive division of its muscles, he thinks that it must be conceded, until experience shows the contrary, that this is the proceeding which ought to be adopted in wounds of the posterior tibial artery high up.

He likewise is of opinion that this will be found to be an easier mode of reaching the vessel when requiring ligature high up for aneurism lower down, than that by incision on the inner edge of the tibia between this and the gastrocnemius muscle, whereby the soleus alone is divided. He dreads, in this mode, the difficulty from pain and spasm, in pulling these muscles aside, to get at the vessel.

Mr. B. B. Cooper said that the author of the paper, in his opinion, had not taken a sufficiently extended view of the subject. In this case he had cut down upon, and tied the artery, below and above the part at which it was wounded—a good practice when the operation could be properly done. Cases, however, might occur, in which it would be more desirable to tie the femoral artery to arrest hæmorrhage from a wound of the posterior tibial artery. The mode of proceeding would depend on the time at which the surgeon was first called to the patient; for if secondary hæmorrhage had occurred, and there had been much inflammation and interstitial deposition and coagula of blood, in parts surrounding the wounded vessel, it would be desirable to tie the femoral artery; for even if the wounded vessel could be secured successfully, secondary hæmorrhage would be likely to re-occur. The author of the paper has referred to cases in which secondary hæmorrhage had taken place after ligature of the artery, at a point above the wound; this had occurred also in cases where the artery was secured at the part at which it was wounded. The cases brought forward by the author were not sufficient to found a general rule on, and the surgeon must in every case be guided in his proceedings by the circumstances presented to him. In cases of wounds of the calf and the leg, in which there was sufficient hæmorrhage to warrant the belief that the posterior tibial artery was wounded, the surgeon, being called early, should separate the soleus from its attachment to the tibia, by which means the artery would be readily found and secured. In this proceeding it was most desirable to cut through the deep fascia, as it rendered the operation more difficult. Where the muscles were divided, as advised by Mr. Arnott, he (Mr. Cooper) was fearful of union not taking place between the divided portions by muscular fibre. In one case in which he had resorted to this proceeding, he was not able to secure the vessel at the wounded part, from the difficulty of finding it. A ligature was applied above the wound, but hæmorrhage continued, and it was found necessary to enlarge the wound, and place the ligature upon the vessel, three inches below the seat of injury. Mr. Travers had some years since performed the same operation. He preferred this plan to the mode advocated by Mr. Guthrie, of dividing the muscles of the calf—an operation which he (Mr. Cooper) had frequently performed on the dead body, though not on the living, as it was not only more difficult, but left the patient in a worse state than did the other.

*Med. Gazette, Dec.* 19. 1845. *p.* 1480.

[Dr. Hall, of East Retford, having read an account of the previous case in the Medical Gazette, was induced to report the particulars of a similar case, which occurred in his practice in 1841. A gentleman had been thrown from his horse, by which a wound of about one inch in length was inflicted at the junction of the upper with the middle third of the leg; the blood flowed very freely:]

A tourniquet was applied to the femoral artery, which retarded the hæmorrhage, but did not altogether check it. The nature of the injury was at once evident, and the necessary steps immediately taken for securing the posterior tibial artery. Introducing a long narrow-bladed knife into the wound, the muscles were carefully divided above and below the seat of injury, down to the deep fascia which was now clearly seen on sponging away the coagulated blood, and into which a small opening had been made.

Enlarging the opening in the fascia, after removing a good deal of coagulated blood, the artery was found and secured by passing a ligature above and below the wound, and dividing the vessel between them. The wound in the muscles was then brought together, and a bandage from the toes to the upper part of the thigh; the patient appeared to experience much relief from this, which in a great measure checked the spasm and quivering of the muscles, which was somewhat severe during and immediately after the operation. A large dose of Liq. Opii. Sed. was given. No constitutional disturbance worthy of notice took place. Both ligatures came away on the 12th day after the operation.

This case adds another to those already recorded, in which the posterior tibial artery has been secured in the way recommended by Mr. Guthrie—in which the wound in the muscles has healed favourably, and the patient completely recovered.—*Med. Gaz., Feb.* 6, 1846, *p.* 233.

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124.—CASE OF ANEURISM OF THE CAROTID ARTERY.—By G. White, Esq., Surgeon to the General Hospital, Nottingham.

[The patient in this case was a delicate man, 34 years of age, and of intemperate habits. A small tumour made its appearance three or four months ago, which had gradually increased in size. In consultation it was agreed that it was an aneurism of the carotid, and that it was possible to tie the vessel below the tumour. The operation was performed on the 28th of August, 1845.]

The patient being laid on a table, in such a position that the light fell directly on his neck, an incision, about two inches long, was made through the integuments in nearly a perpendicular direction, and terminating at the inner margin of the attachment of the sterno-mastoid muscle to the sternum, the upper part of the incision being between the tumour and the trachea. This exposed a large vein, round which two ligatures were placed, and the vein divided between them. The fascia and some loose cellular tissue were next divided, and the edge of the sterno-hyoideus brought into view. Crossing the upper angle of the wound was just seen the omo-hyoideus. At this stage of the operation, very moderate pressure with the point of the finger at the bottom of the wound arrested the pulsation of the tumour; but the beating of the carotid could not be felt. The sides of the wounds were held asunder by blunt hooks, and the wound kept clean by small bits of sponge, put to the bottom of it by means of forceps. With forceps and scalpel the sheath of the artery was now scratched through, a nerve (descendens noni) was seen, and pulled aside by the blunt hook, and the artery was fully exposed. An armed aneurism-needle was, with some difficulty, passed behind it from the outer side; but from the great depth and narrowness of the wound, the needle's point could not be brought forward on the inner side of the vessel. The needle was therefore withdrawn, and another, the curve of which formed a segment of a much smaller circle, was introduced with facility. The artery, as it now lay on the aneurism-needle was compressed with the tip of the finger, and the tumour's pulsation was found to be commanded; the pulsation in the vessel itself was very feeble. The needle being withdrawn, and the ligature firmly tied, the edges of the wound were brought together by two points of suture, and some strips of Macord's plaster.

The patient was then put to bed, and the wound and tumour kept covered by pieces of linen wrung out of cold water. Scarcely an ounce of blood was lost during the operation. The ligature employed was a firm round hemp one of moderate thickness. Before commencing the operation, the patient was desired to exhale completely, and to keep his chest as empty as possible. While in this state, the upper part of the chest was closely surrounded with a very long firm bandage, and he was instructed to respire, as much as practicable, by the diaphragm and abdominal muscles. By this time the length of the neck was materially increased, and the cervical veins were prevented from being alternately distended and emptied. This ingenious method was suggested by Mr. Sibson, our resident hospital surgeon, and I feel sure very much facilitated the operation. It is remarkable that the internal jugular was not seen, and the descendens noni the only nerve exposed. To have gruel, tea, dry toast, and toast-water.

[On the 2nd of September, whilst retching, hæmorrhage took place from the wound, which was arrested by pressure. The tenth day after the operation, hæmorrhage again occurred, to the amount of at least a pint; it was again arrested by pressure, and the patient gradually recovered. Mr. White concludes this case with the following observations:]

The foregoing case proves the practicability of successfully placing a ligature on a large arterial trunk, very near to its origin. The facility with which a formidable hæmorrhage was arrested, occurring immediately after the separation of the ligature, is deserving of notice. Was it not from the portion of the artery connected with the tumour that the bleeding took place?

*Lancet, Feb. 7, 1846, p. 149.*

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125.—SLOUGHING OF THE NECK AFTER SCARLATINA—HÆMORRHAGE FROM EXTERNAL CAROTID ARTERY.—By JAMES S. HUGHES, Esq., one of the Surgeons to Jervis-street Hospital.

[Mr. Hughes read the following case before the Surgical Society of Ireland, in April last. The child had been labouring under scarlatina, with extensive sloughing of the throat. About the time when desquamation took place, diffuse inflammation set in on both sides of the neck, and an abscess formed on the left side; the matter was evacuated by a small opening, no blood escaping at the time. The child's health was gradually declining, when a sudden gush of arterial blood took place from the opening. This was ten days after the abscess was evacuated. Mr. Hughes was in immediate attendance, and commanded the bleeding by making pressure on the common carotid artery; the wound presented a jagged, unhealthy appearance, and, says Mr. Hughes,]

The parts beneath were in a complete state of slough; there were two or three open-mouthed arteries of considerable size exposed; I attempted to take up two of them, but the ligature came away immediately, having cut through the diseased vessels. Seeing no other hope left, I therefore proceeded at once to take up the common carotid artery. I selected this artery in preference to the trunk of the external carotid, in order that I might apply the ligature as far as I reasonably could from the seat of disease. Mr. O'Reilly saw the case subsequently in consultation with Mr. M'Carthy and myself. The child was almost pulseless when the ligature was applied; reaction, accompanied by a hæmorrhagic pulse, set in so soon after the operation, that it was considered advisable to give her very minute doses of digitalis at intervals. Mr. Farmer, the resident pupil of Jervis-street Hospital, sat with the patient during the first night, as a return of the hæmorrhage was dreaded. There was no symptom of an unfavourable nature after the vessel was tied, which could be fairly referred to the operation. The child, during the first night after the ligature was applied, became suddenly weak under the influence of the digitalis, which was then withdrawn,

and stimulants were cautiously substituted; the child had suffered from a stridulous laryngeal cough, owing most probably to the extension of the ulceration of the throat downwards, which appeared to be somewhat increased after the operation, but it was controlled by the administration of a mucilaginous and sedative mixture.

The child, I regret to say, lived but four days after the operation, but what was peculiarly interesting in the case was, that not one drop of blood escaped from the moment the ligature was applied till the child's death. The sensorial functions remained perfect till within a very short period of death. The child appeared to die of extreme exhaustion from the extensive ulceration of the throat and previous loss of blood. We unfortunately failed in obtaining a post-mortem examination.

As to the immediate nature of this hæmorrhage, it is at times very difficult to say positively as to whether the bleeding has been arterial or venous. Thus my friend, Dr. Osbrey, who has written an admirable paper on scarlatina, in which he treats at some length of diffuse inflammation and sloughing of the neck, informs me that he knows of at least half a dozen cases of fatal hæmorrhage from these causes, but that it was found very difficult to say in some of them whether the bleeding had been arterial or venous, both from the surgeon not having been in time to see the character of the hæmorrhage, and from the impossibility of obtaining post-mortem examinations. That the veins give way in these cases more frequently than the arteries, there can be no doubt, but that the arteries do occasionally become involved in the destructive process, there can be as little doubt. In a remarkable case of hæmorrhage from the ear following scarlatina, which has been recorded by Professor Porter, there can be but little question from that gentleman's account that the bleeding was arterial, and probably sprung from the trunk of the internal carotid itself. In a case published by Mr. Fergusson, the child died suddenly of hæmorrhage, which was found on dissection to have taken place from an ulcerated opening in the lingual artery, near its origin from the carotid. In the abscess of the neck following scarlatina, which was opened by Mr. Liston in the year 1841, and which was followed by profuse arterial hæmorrhage and death, it is not improbable that this case, which excited so much interest at the time, was the result of this diffuse inflammation of the neck terminating in deep-seated abscess, and causing ulceration of the artery. In this case no blame whatever could be attached to Mr. Liston. He brought the case before the Medico-Chirurgical Society of London, under the title of a Variety of False Aneurism, but at the meeting at which the case was discussed, Mr. Bransby Cooper made the following remarks:—

The history of the case was altogether not that of aneurism: the early age, the fact of his being of a strumous habit of body, that the swelling had followed an attack of scarlatina, all were presumptive evidence of the swelling being an abscess.—(Vide *Lancet*, March, 1842.)

Dr. Blood lately lost a patient from arterial hæmorrhage from throat in scarlatina. Dr. Battersby informs me that he lost a boy of ten years of age from hæmorrhage from the throat, the result of scarlatina; the child had suffered from the disease in its worst form, from which he appeared to be recovering; the ulceration of the throat increased; secondary fever was established, and suddenly (as the friends told Dr. Battersby), the boy's mouth filled with blood, and he died almost immediately.

Some years ago, I saw a case in Steven's Hospital in which the patient died of hæmorrhage from the internal carotid artery, the result of venereal ulceration of the throat; the man was under the care of the late lamented Dr. Colles.

On the other hand, in three cases of fatal hæmorrhage from sloughing of the neck, related in Dr. Henry Kennedy's valuable treatise on the Epidemic of Scarlatina, the *post-mortem* examinations in two of them proved the hæmorrhage to have sprung from the internal jugular vein. In another

fatal case of hæmorrhage, which has been furnished me by Dr. Samuel Gordon from Dr. Corrigan's hospital cases, the bleeding was from the internal jugular vein. In the Medical Press for March, 1843, I find two cases which are well worthy of observation; the cases were brought before the Medico-Chirurgical Society. The first was under the care of Mr. Bloxham, who gave the following account of it:—The patient, five years of age, after scarlet fever, had suppuration of the glands of the neck on the right side, near the angle of the jaw; five days after the abscess burst, blood of a venous character was discharged from the opening, at first in small quantity, and afterwards more copiously. Graduated compresses were applied, but the hæmorrhage could not be restrained, and the child died on the fifth day from the bleeding. On dissection, an ulceration of an oblong shape, about five lines in its long axis, was found in the inner side of the internal jugular vein, and opened immediately into the sac of the abscess; extravasated blood was also observed beneath the integuments of the throat or forepart of the neck. How very nearly this case resembles Mr. Liston's must strike every one. In Mr. Bloxham's case it was the vein that gave way; in Mr. Liston's the artery. The other case was related by Mr. Snow. The patient was a little boy, who had an abscess just under the angle of the jaw as he was recovering from scarlatina; fluctuation was very distinct in the swelling, and the matter seemed beneath the skin; but as it remained in this state several days without breaking, it was deemed advisable to open it. On an incision being made, however, venous blood flowed in a large stream, without any mixture of pus. The bleeding was immediately stopped with a compress, and did not again return. Two days afterwards the abscess opened spontaneously at a little distance from where it had been lanced, and discharged a quantity of matter without any blood. A similar swelling formed on the other side of the neck, which was allowed to discharge spontaneously, and the boy recovered. Mr. Snow believed that the jugular vein had been opened in this case, although it was impossible to perceive the vein through the skin.

*Dublin Med. Press, April* 22, 1846, *p.* 241.

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126.—TWO CASES OF DISEASE OF THE BRAIN FOLLOWING THE APPLICATION OF A LIGATURE TO THE CAROTID ARTERY.—By J. P. VINCENT, Esq., Surgeon to St. Bartholomew's Hospital.

[The two following cases possess considerable interest. In the first, the patient was forty-eight years of age; he was admitted into the hospital in July, 1829, for the treatment of an aneurismal tumour under the right ear, of eight months' standing. It was about the size of a small orange.]

On July the 18th, Mr. Vincent tied the common carotid artery. In about an hour and a half after the operation, the patient was discovered to be slightly convulsed on the right side. He afterwards sunk into a state of stupor. He was bled to thirty ounces. After this he became more sensible. He had twitchings of the right side. He was again bled during this and the two succeeding days, and altogether lost eighty-four ounces. His left side became paralyzed; his urine and fæces passed off involuntarily; he swallowed with difficulty; and on the 24th he died. On examination of the body, it appeared that the veins of the right side of the brain were not so filled as on the left. The substance of the brain on the right side was quite soft and cream-like. There was no deposition of blood in any part, but a little more serum in the ventricles than usual.

[The second case was a young man, twenty-eight years of age; he was admitted on the 9th of April, 1845.

Whilst smoking a pipe, a few hours previous to admission, he stumbled against a door, and drove the stem of the pipe into the tongue, a little anterior to the left tonsil. The bleeding was trifling; no foreign body could be

found in the wound, but the parts were much swollen, which for five days, increased so as to interfere with deglutition and respiration. On the 16th, hæmorrhage took place to the amount of twenty-four ounces; it was arrested by pressure, and Mr. Vincent proceeded to tie the carotid artery.]

It was observed, during the operation, that the patient made violent efforts with his right side, but that he never moved the left extremities. During the night the left extremities were frequently convulsed. His pulse, which had been 132, sunk to 96. During the next two days, the twitchings of the right side and paralysis of the left side continued. About midnight of the 18th, whilst coughing, about an ounce of arterial blood flowed through the nose and mouth, and from the wound in the neck. He was sensible. On the 21st, a fit of coughing, with hæmorrhage, to the extent of two or three ounces, from his nose and mouth, terminated his existence.

[On examining the brain, the convolutions on the right side were flattened and softened, and in its substance there were cavities filled with ash-coloured effusion, with shreds of a greenish hue.]

*Lancet, Jan.* 31, 1846, *p.* 134.

[Mr. Teale, in his "Retrospective Address," mentions two instances in which hemiplegia followed the tying of the carotids. The one occurred to M. Sedillot, the other to Dr. Fairfax: in the former the patient became paralysed on the left side, and died in nine days; a post-mortem examination showed that the right side of the brain had been deprived of its due supply of blood. In the latter, the right side was paralysed, and death took place on the 5th day. Mr. Teale remarks:]

I strongly suspect that in these cases the jugular vein, and its tributaries within the cranium, had been obstructed with fibrinous coagula.

*Prov. Med. Transactions, Vol.* 2, *N.S., p.* 96.

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127.—LIGATURE OF THE LEFT SUBCLAVIAN ARTERY, ATTENDED WITH SOME PECULIAR CIRCUMSTANCES.—By J. C. Warren, M.D., Professor of Anatomy and Surgery, Boston, U.S.

[At a meeting of the Royal Medical and Chirurgical Society, a communication from Dr. Warren, was read on a case of ligature of the left subclavian artery. A man, about 30 years of age, came under Dr. Warren's care; he had fallen whilst intoxicated, and injured his left shoulder; it was supposed to be dislocated, by the practioner called to the case, and violent efforts at reduction were made. He was then sent to the hospital, and became a patient of Dr. Warren's. Leeches and cold applications were applied, and next day it was ascertained that no dislocation existed. A few days afterwards, whilst coughing, he felt something give way in his shoulder, which, with the arm became very much enlarged and discoloured. Motion and feeling were lost, and no pulse could be felt; an abscess formed, pointed, and opened, when coagulum escaped, and a large quantity of fluid blood. Three days afterwards, it began to bleed so profusely, that the patient was in imminent danger, and it was decided that the subclavian should be tied. Dr. W. observed that:]

A great difficulty presented itself in the outset of the operation, the swelling of the shoulder, the tumour in the axilla, and the natural shortness of the neck almost obliterating the space between the shoulder and the lower jaw. The author, after minutely detailing the steps of the operation, states that the aneurism-needle was passed under the first dorsal nerve, which was mistaken for the artery. The wound was too deep, too narrow, and in consequence too dark to permit the artery to be visible. The anterior scalenus was partially visible, and, passing the forefinger of the hand to the edge of this, a good portion of the muscle was divided by the probe-pointed bistoury, introduced upon the finger. The subclavian artery then became quite sensible to the touch, and slightly distinguishable by the eye.

A long aneurism-needle was passed under the artery, and at this moment a slight whistling was heard, and the author was satisfied that some air had entered the thorax. The ligature was tied, and the wound closed.

The patient improved after the operation. On February 22nd, the thirteenth day, the ligature was removed. On the 29th a stream of blood was seen to issue from the unclosed part of the wound; the blood lost amounted to about a pint, did not issue per saltum, and was of a venous colour. The hæmorrhage was arrested by pressure. At the commencement of March, he had an attack of pneumonia, confined to the lower lobe of the left lung, and also a second attack about the 1st of May. By the 1st of October, the swelling had disappeared from the arm, and the motion had returned in the shoulder-joint. The large excavation in the axilla was reduced to a fistulous tube. On February 4th, three hundred and sixty-one days after the operation, the author was able, for the first time, to detect a distinct pulsation in the radial artery, and subsequently one of an indistinct character in the ulnar and brachial. The patient, June 15th, nearly recovered. There were still fistulous openings in the neck and axilla. Sensation and motion were slowly improving.

[In a discussion which followed, Mr. Arnott observed, that Dr. Warren not knowing the exact seat of the injury, adopted the best mode of practice. He also observed, that several points alluded to in Dr. Warren's remarks on this case were not new, as Dr. W. seemed to suppose; as for example, an artery uniting under a ligature without internal coagulum forming—effusion of lymph around the artery, &c.

Mr. Quain said that the line of practice recommended in lesions of arteries, viz.: to cut down upon the vessel and tie it at the seat of injury, admitted of exceptions; as for instance, where there was inflammation, with extensive swelling with suppuration, as in Dr. Warren's case. Mr. Quain then spoke of the place where the vessel was tied, and said:]

He was of opinion, that when there was any difficulty about placing the ligature on the vessel where it rests on the rib, it should be made a general rule to seek it beneath the scalenus, or after it had passed beyond the muscle, and before it approaches the tubercle on the ribs. This part of the artery is higher, much higher in some cases, and on this account more accessible (the clavicle being elevated) than where it rests behind the tubercle on the rib.

In illustration of the advantage of the course here recommended, he cited two cases, which occurred in the practice of Dupuytren. In one of these, the first (he believed) in which that surgeon operated on the subclavian artery, he placed the ligature on the part of the vessel which is behind the scalenus. The result was in all respects favourable; and an account of the case was published by Dupuytren. The second operation was performed a short time after that just referred to, and the intention was to tie the subclavian on the rib. In this instance a large nerve, with half the artery, was included in the ligature. The aneurism-needle had been passed through the vessel. The patient died of hæmorrhage in a few days. The history of this case was not, that he was aware of, published by Dupuytren; it was communicated to the Edinburgh Journal by Dr. Rutherford, who was present at the operation. He referred to another case, in which Sir A. Cooper failed to tie the same artery on the first rib; and from these facts he drew an inference in support of the plan of operation above noticed.

[With respect to the formation of an internal clot in the vessel, Mr. Fergusson placed less importance on it than is usually done, for the vessel closes after the application of a ligature near a large branch. This gentleman observes that]

Mr. Porter, of Dublin, had tied with success the right carotid within an eighth of an inch of the innominata; and the internal iliac and other arteries which had been tied with success, showed that arteries might close by adhesive inflammation, though immediately contiguous to such a stream of blood as passed through the innominata. *Lancet, Dec.* 6, 1846, *p.* 620.

128.—LIGATURE OF THE SUBCLAVIAN ARTERY, IN A CASE OF HÆMORRHAGE FROM THE AXILLARY ARTERY.—By R. J. Mackenzie, M.D., &c.

[The following case is of considerable interest, from the fact of there being so few on record, in which the subclavian has been tied for a direct wound in the axillary artery; indeed, we believe the practice to be pursued under similar circumstances, would be a matter of doubt with most surgeons.

The patient was 35 years of age; on the 5th of November last, he fell upon a red hot poker, which entered the right axilla, just behind the tendon of the great pectoral muscle; a few drops only of blood escaped, but the pain he described as most excruciating; it was, however, relieved by poultices, the application of which he continued until the 13th, when an eschar separated, and on its coming away, a copious discharge of blood flowed from the wound. It was arrested at the time by pressure, but recurred on the 15th, in a full stream: a compress of linen, kept in place by a bandage, again stopped it; but on the 17th it made its way through them.

The patient was now sinking from the loss of blood, and it was concluded that if the bleeding point could be found, and if it were near the external orifice, the vessel should be tied above the opening, in its coats. In case of this being impracticable, then there were two other methods of treatment. 1st. Ligature of the subclavian, not, perhaps, the method most likely to be attended with success, in consequence of the free anastomosis between the branches of the axillary and subclavian arteries: and, 2dly. Amputation at the shoulder joint.

In order to afford the patient the opportunity of following his own employment, the former plan was adopted. The idea of tying the vessel at the seat of injury, was at once abandoned on examination of the injury. The opening passed downward, three inches in depth, and the artery and nerves lay bare; the tissues were all infiltrated with blood. It was then decided to tie the subclavian, and the operation was thus performed on the nineteenth of November.]

The integuments being drawn down by the hand of an assistant, an incision was made over the clavicle, the skin divided, extending from over the outer border of the clavicular portion of the sterno-mastoid for about three and a half inches outwards, parallel with the clavicle, and about half an inch above that bone. A few fibres of the platysma-myoides were divided, and the external jugular vein, which lay in the outer third of the wound, was slightly separated by the knife from its cellular connections, and held by a copper spatula to the outer side of the incision. The rest of the platysma engaged in the wound, and a few fibres of the clavicular portion of the sterno-mastoid were next divided. After a little dissection and the opening of the deep cervical fascia, the lower border of the posterior belly of the omo hyoid was brought into view, below which a mass of adipose tissue protruded; this being rather in the way of the knife in clearing the deeper parts, was dissected out and removed, when a branch of the brachial plexus was seen running across the bottom of the wound. On now introducing the finger, the insertion of the scalenus anticus into the tubercle of the rib was easily recognized, and the artery was felt pulsating to its outer side. A blunt hook being now introduced at the inner part of the wound, and the parts slightly retracted towards the sternum, a very slight dissection exposed the coat of the artery. This was laid bare to the extent of about a sixth of an inch, and a common aneurism needle easily passed around it from within outwards. The ligature was then tightened, and tied with a double knot. The edges of the wound were brought together by three points of suture, and a piece of lint, moistened in cold water, applied. One small vessel was divided at the first incision, which was twisted. The patient bore the operation remarkably well, and showed his want of consciousness of the tightening of the ligature, by inquiring, after the knot was secured, if "the tying of the thread would give him *much pain?*

An opiate, consisting of a drachm of solution of muriate of morphia was given. Some oozing of blood took place about two hours after the operation, by which slight tension of the sides of the wound was produced. Had the stitches been then divided, and the coagula removed, the wound might have been left in a more favourable state for union; but, as the patient, though willing to submit to any thing which might be thought proper, was rather alarmed at any further interference, I thought it better to be satisfied with the continuance of the cold applications.

[The patient did very well, no secondary hæmorrhage coming on. December 8th, the ligature came away. Dr. Mackenzie, in concluding the report of the case, observes:]

A return of the hæmorrhage from the axilla was certainly the danger to be most apprehended, and was, perhaps, the only real cause of anxiety for the issue of the case. The free anastomosis, existing between the branches of the axillary and subclavian arteries, is sufficient, in general, to admit of a return of the pulsation in aneurismal tumours in this situation, at a shorter or longer period after ligature of the subclavian artery. Had the re-establishment of the circulation, in the present case, proved sufficient to renew the hæmorrhage, amputation must have been immediately performed, as further pressure in the axilla would then have been inadmissible.

*Northern Jour. of Med., March*, 1846, *p.* 129.

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129.—CASE OF ANEURISM BY ANASTOMOSIS OF THE SCALP.—By Wm. Fraser, M.D., Montreal.

The aneurismal condition of the extreme blood-vessels, named by the older surgical writers *nævus maternus*, is, by the moderns, still so called in its superficial forms; in its deeper seated, *aneurism* by *anastomosis*, *tumeur erectile*, *tumeur variqueuse*, *placentary tumour*, and in all its forms *talangiectasis*. Previous to the time of John Bell, the deeper forms, or such as lie beneath the skin without involving it, were neither designated by name, nor was their nature understood; they were, probably, confounded with a variety of other diseases, or described as anomalous. Mr. Bell first pointed out their distinctive properties, and denominated them aneurisms from anastomosis: this appellation I, on the present occasion, retain, not because I think it the most proper, but because by it the disease is best understood.

[Dr. Fraser's case is chiefly interesting in relation to the question of treatment. The patient was a young man, twenty years of age. He first consulted Dr. F. on the 19th of June last, on account of a small tumour situated over the posterior and superior angle of the right parietal bone.]

About twelve years previously he fell on his back, that part of the head occupied by the tumour struck a log, which produced a bruise of the scalp, this spot became very hard, then commenced throbbing, and has been gradually enlarging; during the year preceding the above date, it had increased more than during any former one, and so troublesome had the whizzing pulsation he then experienced become, that it occasionally prevented him from sleeping; in other respects he enjoyed good health.

To the eye, pulsation in the tumour was very apparent; the scalp covering it was thinner than natural, but not discoloured; to the ear, aided with the stethoscope, the aneurismal bruit was distinctly perceptible; to the feel it was soft, communicated a peculiar thrill to the finger, and could be nearly emptied by pressure, when the bone beneath felt deeply and irregularly indented; on removing the pressure it refilled almost immediately. The occipital and temporal arteries on the same side were greatly enlarged, and imparted a vibrating sensation to the finger placed over them. The bone beneath them also was channelled out, evidently by the continued stream of blood passing through the enlarged and excited vessels, having caused its absorption.

[In consultation with several eminent men, Dr. Fraser determined to treat this tumour by means of setons, and small ones were passed on the 19th of June; next day he passed another through, and two through the occipital artery, between the tumour and mastoid process.

Dr. F. next endeavoured to obliterate the occipital and mastoid arteries by twisting around them a hare-lip suture, and painted the tumour with iodine. When the setons were removed, hæmorrhage took place, which was arrested by pressure. As there were still several large branches of arteries supplying the tumour, and a bruit could still be detected in it, he treated them in the same way, by needle and hare-lip suture. The tumour now became flaccid, and was strapped down with a compress of sheet-lead and a bandage. By the 27th of September there was scarcely any perceptible enlargement of the part. Dr. Fraser observes:]

The following published cases of a similar disease, six in number, will illustrate the various plans of treatment adopted for its cure. The first is recorded by Pelletan, in the second volume of his Clinique Chirurgical.

Case I.—"Catherine Micat, aged eighteen: entered the Hotel Dieu in September, 1805, on account of a tumour which occupied the whole of the temporal region, and appeared to be composed of arteries enormously dilated. The ear was red, large, and agitated throughout by pulsations synchronous with those of the heart. At the top of the helix was a cicatrix, which gave way at the slightest touch, and the crevice resulting from its rupture furnished a brisk and obstinate hæmorrhage; and this was renewed at every attempt to change the dressings. Pressure applied over the temporal artery arrested the movement and pulsation in the anterior part of the tumour. Permanent compression over this vessel was therefore commenced as a means of cure, but it was found to be too painful to be continued. M. Pelletan next undertook to secure the temporal and occipital arteries: but in the operation the temporal artery was transfixed, and only partially taken up; and in passing the needle under the occipital artery, blood gushed out from both extremities of the puncture; but after dividing the integuments over it this was secured, and pulsation ceased in the tumour. Compression was again employed, but it produced a slough, in consequence of which it became necessary to dress the part oftener than usual; at each dressing the hæmorrhage recurred, and the pulsation, though less strong than usual, was renewed. In the course of treatment constitutional symptoms ensued, erysipelas appeared on the face, an abscess formed in the centre of the tumour, and another over the sternum; the occipital artery bled frequently; and, finally, at the end of three weeks from the operation, the patient died."—*American Journal of Medical Science, May*, 1839.

Case II.—This case occurred in the practice of Mr. Wardrop, and is thus described in the *Lancet:*

"———æt., twenty-two, of a full and powerful habit of body. On the left side of his head, covering a portion of the frontal, parietal, and temporal bones, is a very large pulsating tumour, whose surface is extremely soft and very irregular, forming many lobules of various sizes and position, and resembling in appearance, those large varicose tumours which are occasionally found in the course of the saphena vein of the thigh. The pulsation is distinct throughout every part of the tumour, which can easily be emptied of its contents by pressure. The trunk of the temporal artery, and its anterior and posterior branches, are uncommonly enlarged, and pulsate with remarkable vigour. The two latter terminate suddenly in the swelling, which occupies the usual position of the middle temporal artery. The posterior aural artery and the occipital, as well as a branch from the temporal vessels of the opposite side, are wonderfully enlarged, and they communicate abruptly with the disease. All these arteries have attained such a size that their situation is evident to the eye. On emptying the tumour of its contents, the cranium below is found to have undergone a remarkable process of absorption, particularly at those points where the tumour has at-

tained the greatest bulk. It must at many places, have become exceedingly thin. The integuments covering the most prominent portion of the swelling, have become very much attenuated, and it is evident that ulceration of them must soon be the consequence of the distension. Over the trunk of the temporal artery is a long cicatrix, the result of an operation which was performed for the ligature of that vessel. The patient complains of frequent most distressing pains in his head, in other respects he enjoys excellent health. The complaint commenced twelve years ago, after the receipt of a blow, and has increased gradually. Two months since, a Mr. Babbington applied a ligature to the temporal artery, but this did not in any way check its progress."—No. 211, p. 762.

Mr. Wardrop tied the common carotid, immediately upon which the tumour ceased to pulsate, but did not contract.

Secondary hæmorrhage occurred on the fourth day after the operation, and required the most active exertions of Mr. Wardrop and his assistants to prevent its proving fatal. The patient escaped this danger, but the tumour suffered no amendment; and he died from some other cause, in the course of two months.

Case III.—Is related by Dr. M'Lauchlan, in the second number of the Glasgow Medical Journal.

"W. Maclure, æt. thirty, a discharged soldier. Soft, puffy, pulsating, and somewhat elastic swellings, of a varicose appearance, were found to occupy the course of the temporal, posterior aural, and occipital arteries, and their principal branches, each branch terminating by a tortuous extremity. These swellings could be made to disappear partly on pressure, but on its removal they speedily regained their former volume. They pulsated throughout their whole extent, and the pulsations were synchronous with those of the heart. By pressing on the common carotid, the pulsations ceased all along the swellings; and by interrupting the flow of blood through the temporal or posterior aural, the throb was interrupted in corresponding parts of the tumour. They were not painful on being handled, but he complained much of the torture he had experienced for the last two months from the throbbing, which often deprived him of rest for nights together, and, as he said, made his existence miserable to him. The integuments covering the swellings were of their natural colour; only at those points which were most prominent, they had a slightly bluish red tinge. About ten years previously he had the temporal artery opened for an attack of ophthalmia. A small aneurismal tumour formed at the point of incision, for the cure of which the artery was cut across lower down; but this not succeeding, the vessel was again exposed and the ligature applied. The little tumour disappeared only for the time; on its return it was but small, gave him no uneasiness, and though he served as a soldier for five years afterwards, he never complained of it to his surgeon."

Dr. M'Laughlan tied the temporal artery, upon which the anterior and central portions of the tumour ceased to pulsate, and felt flaccid and doughy. But being apprehensive, from the extreme thinness and expansion of the coats of this vessel, that the obliterating process would not be effectually and safely performed, he, on the day following, tied the common carotid. The patient was soon afterwards seized with inflammation of the chest, which, notwithstanding the most free depletion and other active measures, proved fatal, on the fourth day after the operation.

Case IV.—Was published by Mr. Syme, in the Edinburgh Medical and Surgical Journal, No. xcviii. in connection with the preceding cases.

"About the middle of July, 1828, I was consulted by Mrs. T., aged fifty, on account of a tumour about the size of a large gooseberry, which was situated behind the right ear, over the mastoid process. I at first sight conceived this to be a common encysted tumour, which it exactly resembled, but upon compression, discovered that the disease was of a very different nature. It readily yielded to the finger, and in its place there could be felt

a considerable depression. So soon as the pressure was removed, it immediately filled again, and if the finger was gently applied while this took place, a jet of blood could be felt issuing from the bottom of the tumour, and the patient heard such a whizzing noise that she could hardly be persuaded the bystanders also did not perceive it. Below the tumour I felt the posterior auricular artery greatly enlarged, and throbbing with violence; when this vessel was compressed the tumour became flaccid. The patient complained of pain and noise in the swelling, the latter being often so distracting as to deprive her of sleep.

The swelling was first noticed after an accouchment about ten years ago. It had increased very gradually until of late, when its progress was more rapid. Several years ago, she asked the opinion of several physicians and surgeons, who recommended pressure, which was accordingly tried, but without any advantage.

Mr. Syme tied the posterior auris a little below where it entered the tumour, which became flaccid, and the dilated vessels disappeared.

On the eighth day after the operation, happening to press on the tumour, blood trickled away from the side of the ligature, which ceased on applying pressure; it recurred twice in the twenty-four hours on the following day, and was arrested by the same means.

"For some weeks after the operation, the tumour remained small and flaccid, but when the patient resumed her ordinary diet and exercise, it began to resume its former condition. It was moderately tense; and though no throbbing in it could be felt with the finger, Mrs. T. complained of the noise and pain which had distressed her previously in a degree comparatively slight, but sufficient to disturb her repose. No appearance of the varicose dilatation of the artery could be perceived.

Finding that the uneasy symptoms continued to increase, and being anxious to take advantage of the command which had been obtained for the present over the disease, by obstructing the principal supply of blood, I determined to take an effectual step for the patient's relief.

On the 29th of October, assisted by Professor Ballinghall, I cut directly through the long direction of the tumour, which then showed itself to be composed of large irregular cells, invested by a firm capsule. While Dr. B. compressed above and below the tumour, I dissected it out, and then attempted to tie the vessels, but finding this very difficult, I adopted the suggestion of Dr. B., and included them in ligatures by means of a small curved needle. The ligature being drawn, the hæmorrhage ceased. I then filled the wound with dry caddis, and applied a firm bandage about the head. The patient did not experience the smallest inconvenience from the operation, excepting the pain immediately attending it. The ligature separated in about a fortnight, and the wound is now completely healed."

Case V.—Is recorded by Dr. Gibson, of Philadelphia, in his Institutes and Practice of Surgery, vol. ii., p. 397.

Elizabeth Laush, a married woman, twenty-five years of age, residing in the neighbourhood of Reading, came to Philadelphia in the month of April, 1823, anxious to obtain relief for a very large pulsating tumour, which nearly covered the right side of her head, and sometimes bled so profusely from numerous ulcerated spots on its surface, as frequently to endanger her life. This tumour had existed from infancy, but its increase was so gradual, and the pain attending it so inconsiderable, as to give her little uneasiness. After her marriage, and especially during her second pregnancy —in which she was four months at the time I saw her, the growth of the swelling was so rapid, its pulsation so alarming, and the hæmorrhage from it so frequent and debilitating, that she was prepared to submit to any operation I might propose for her relief.

My first object was to cut off temporarily the chief supply of blood to the tumour. With this view I made several incisions, each about an inch long, through the scalp, and at some distance from the margin of the tumour, and

tied the chief branches of the temporal and occipital arteries, many of which were enlarged to the size of the common carotid. Having in this way encircled the diseased mass, I had the satisfaction to observe the pulsation diminish, and the tumour particularly to shrink; the hæmorrhage, also, from the surface had ceased. A slight erysipelas of the scalp followed the operation. This occasioned a week's delay; in the meantime the blood was evidently finding its way through the anastomosing vessels to the tumour. An incision was made about two inches long by a single stroke of the knife, through the integuments to the bone, commencing near the back part of the ear, and midway between the edge of the tumour and the line at which the arteries were taken up in the first operation. An incredible quantity of blood issued in a moment from every part of the wound; in a few moments, however, every vessel was secured. By this time the patient was so extremely faint, as to render it impossible to proceed farther, indeed many of the spectators supposed her to be dying. Without delay, therefore, she was conveyed to bed, and the wound dressed by interposing lint between its edges to prevent their re-union. In ten or twelve days the patient had so far recovered her strength as to enable her to submit to a farther incision of the scalp, commencing at the place where the last operation had terminated. This operation was also continued so long as the patient could bear it, or as was deemed prudent. Lint was then placed in the wound, and the patient put to bed, and carefully nourished for a fortnight, at which time the third and last operation was performed, by dividing the remaining portions of the integuments, and removing the tumour from the bone. This was accomplished with comparative facility, the tumour being by the preceding operations nearly drained of its blood, and almost insulated. Care was taken in separating the diseased mass not to remove the pericranium; the bones, therefore, notwithstanding a great portion of the parietal and occipital was exposed did not exfoliate, but were covered in a few days by florid and healthy granulations, the edges of the wound gradually approximated, and were so far closed in four or five weeks, as to enable the patient to return to the country, where in a little longer time, her health was perfectly re-established, and at the end of the usual period she was delivered of a promising son."

Case VI.—Is published by Dr. Easdaile, in the Indian Medical Journal. "Madub, an untried prisoner, aged thirty, of slender make, but healthy-looking, admitted into hospital 25th March, 1844. A soft, elastic, pulsating, irregular swelling occupies the head from the left temple to the right ear: at the crown of the head it shoots up into a conical tumour which pulsates violently, and the skin is thin, red, and tender to the touch. All the arteries of the scalp, on the left side, are greatly enlarged and beating strongly. The temporal is as large as a goose quill, and whizzes under the finger; the occipital and auricular arteries are equally active. The varicose veins form a cluster of grape-like tumours, and discharge themselves chiefly by the auricular vein, which is of a great size; when this is stopped the whole scalp whizzes under the hand. The arteries on the right side are also very active, especially the occipital, and it is to be feared that the disease has extended to them, but it may be local excitement only. It commenced six months ago, by the patient's account, but probably sooner. Its progress has been so rapid, however, and the present state is so alarming, the integuments being on the point of bursting, that an operation is absolutely necessary to save his life."

On the 31st March, Dr. Easdaile tied the common carotid artery.

On the 13th April (on which day the case is reported), the ligature was gone, the swelling was daily decreasing, the integuments were quite lax, and the supply of blood from the right side sufficiently interrupted—the excitement of the arteries was going off, and a radical cure was expected. The treatment of the class of aneurisms by anastomosis, to which the preceding cases belong, may be conducted on three different principles. 1. Re-

moval of the morbid structure. 2. Diminution of the arterial supply. 3. Effecting change of structure.

Each of these plans may be executed in a variety of ways, and they may be variously combined. For instance, in cases IV. and V., the second and first were conjoined, and in my case the second and third. To attempt the first plan in such tumours as the preceding, without its being preceded by the second, might be attended with the most serious consequences—the gush of blood might prove instantly fatal. Hence the safest and best method of cutting off the arterial supply is a question of some interest. The minor operations by which this has been attempted, are four in number: 1. Pressure over the arteries. 2. Taking them up. 3. Making incisions through the scalp around the tumour, and taking up the arteries. 4. With needles and sutures, as done successfully in M'Ewan's case. As examples of these different practices are recorded in the preceding cases, I will leave the reader to draw his own inferences as to their comparative merits. When the obliteration of the feeding arteries is accomplished, by whatever means, I feel assured, that in many instances at least, further proceedings will be uncalled for.

Within the last few months, electro-galvanic action has been successfully employed to effect the consolidation of aneurism, by Dr. Petrequin, chief surgeon to the Hotel Dieu at Lyons. Three cases have been treated by him with electricity, but two of his patients have been lost sight of, before the influence of the treatment could be duly appreciated. The following are the interesting particulars of the third case:

"Case.—Traumatic Aneurism of the Temporal Artery.—D., aged nineteen, a locksmith, was brought to the hospital senseless, on the 4th of August, 1845, immediately after a violent fall on the head. The lower maxilla was fractured at the symphisis and the left orbit was the seat of considerable ecchymosis. The symptoms of cerebral commotion had given way in a great measure, when variola declared itself. The rupture fever accomplished its periods in the usual manner, and it was only on September the 9th, five weeks after the accident, that Mr. Petrequin could direct his attention towards a tumour occupying the left temporal region, and which he had noticed long before. The swelling was of the size of an almond, soft, and almost indolent on pressure; it was seated on the course of the temporal artery, and presented pulsations isochronous with those of the arteries. These pulsations ceased when pressure was exerted on the temporal artery below the tumour, and re-appeared on the pressure being removed. These signs left no doubt of the nature of the case, and aneurism of the temporal artery, probably due to the injury experienced by the vessel during the accident, was diagnosed. On the 10th of September, galvano puncture was performed by the introduction of two sharp steel pins crossing each other at right angles in the tumour; the heads of the pins were then placed in communication with the wires of a voltaic pile, and a shock and a sharp pain were experienced by the patient, the pain increasing with the intensity of the electrical action. The operation lasted ten minutes, and fifteen plates were employed. The pulsations gradually diminished in the tumour during the operation, and at its close had nearly disappeared. No accident followed the experiment, but a solid indurated swelling took the place of the tumour, the temporal artery ceasing to beat above the aneurism, while its pulsations remained distinct below. On the 20th of September, absorption had achieved the cure, and neither tumefaction nor pulsations could be detected in the spot where the malady had existed. M. Petrequin gives the following precepts, which he deems will insure the complete coagulation of the blood contained in aneurismal tumours:—1. Compression of the artery between the aneurism and the heart during the application of the galvanic agency.—2. The pins introduced into the tumour should be numerous, cross each other at right angles, and their surface should be protected by a coat of varnish, in order to prevent unprofitable loss of the electric fluid.—3. After

the operation, ice should be applied to the tumour. This is the first case on record of aneurism cured or even treated by this method, which has been of late employed in the treatment of a large number of diseases." "The coagulating influence of electricity on blood leads us to hope that it will be found as advantageous in external aneurism, and that Dr. Petrequin's case will not long remain a solitary instance of success."—*Medical Times.*

For the practical application of this remedial agent in the treatment of aneurism, Dr. Petrequin is entitled to the gratitude of the profession; at the same time it is right to bear in mind that the idea did not originate with him, for years ago, "it has been suggested that galvanism might be applied to the important purpose of coagulating the blood within an aneurismal tumour, and thus removing the disease without resorting to the ligature." Should it prove as effectual in other hands as it appears to have been in the above case, it will form a new era in the treatment of the ordinary forms of aneurism, and I have no doubt can be made available in that of aneurism by anastomosis.

*British American Journal of Med. and Phy. Science, Feb.* 1846, *p.* 283.

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130.—TREATMENT OF NÆVI.

[The editor of the British and Foreign Medical Review makes the following remarks, in noticing Professor Dieffenbach's Operative Surgery. He says the Professor]

Speaks highly of the effects of the pure liquor plumbi, and of the solution of alum, in flat nævi up to the size of a crown-piece. Lint steeped in the lead solution is fastened over the part with a bandage, and the lint wedded by fresh applications of the lead, without frequent removal of the lint. After days, or weeks, the swelling becomes whiter, flatter, and firmer; soon after, little firm white spots form on the surface, and the cure is certain. By means of the solution of alum and compression, Dieffenbach has cured nævi so large that extirpation would have been impossible. It may be necessary to keep it constantly applied for six months. Extirpation of the tumour and union of the edges of the wound by needles and twisted suture, is the best method of all, when the lead or alum has failed. Extirpation is to be either total or partial, according to the size of the tumour. If partial, it is done in the same way as partial excision of a cicatrix.

*British and Foreign Med. Review, April,* 1846, *p.* 290.

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131. CASE OF FALSE ANEURISM.—By Robert Liston, Esq., F.R.S., &c.

[At a meeting of the Royal Medical and Chirurgical Society, in April last, Mr. Liston gave the particulars of a case of false aneurism, which had been treated by ligature. The patient was twenty-eight years of age, and exceedingly corpulent. On the 23rd of May, 1845, he received a pistol-shot in the upper and outer part of the right thigh; the ball traversed the course of the femoral vessels, and passed out at the left groin. The hæmorhage was very profuse, and it was with great difficulty he could be roused from a state of syncope into which he had fallen. A large tumour formed at the lower part of the abdomen, from the extravasation of blood; as this increased in size, a pulsation could be detected in it; it was of an oval form, firm, but elastic, the skin covering it was discoloured and thin; the opening in the groin had closed with a very thin cicatrix. The appearance of the patient indicated extensive loss of blood. Mr. Liston observes:]

The nature of the case was very apparent. A large false aneurism, not well bounded, rapidly increasing, and arising from a wound of the femoral artery, or some branch divided close to its origin, had to be arrested, other-

wise the patient must be left exposed to the risk of perishing suddenly, and at no distant period. After consultations on the evening of the 30th, and morning of the 31st, the external iliac artery was tied, with the loss of not more than a tablespoonful of blood, and with the immediate effect of arresting the pulsation, and removing, in a great measure, the tension of the tumour. Symptoms of peritonitis supervened the evening of the second day, and on the following afternoon the patient sunk.

The author subjoined an account of the post mortem examination by Dr. Allen, of Haslar. The course of the bullet was traced from the outside through a dense layer of fat, about two inches in thickness. It had divided one of the superficial branches of the femoral artery, about half an inch below Poupart's ligament, and about an inch from the main body of the femoral artery, which had caused a false aneurism. The sac contained about three ounces of blood. No other artery appeared to have been wounded. A considerable quantity of sero-purulent fluid was found in the abdominal cavity, and patches of acute inflammation were observed on the intestines. The peritoneum adjoining the wound of the operation was inflamed. It had not been injured by the knife. The ligature had been properly applied to the external iliac artery. The abdominal viscera were healthy, but loaded to an extraordinary degree with fat. There was some enlargement of the right limb, apparently no mortification. The femoral artery was pervious. The blood in the aneurismal sac was firmly coagulated, and there was no mark of recent oozing from the injured artery. The ball had passed immediately over and along the course of the artery for about half an inch before dividing it. The artery, although not actually detached, would not have borne a ligature.

That a vessel of this class, the author remarked, should have bled so furiously, in the first instance, could not have been anticipated. Having done so, one can so far understand the active pulsation and rapid extension of the tumour. It was, of course, quite impossible to determine whence the blood flowed into the aneurismal cavity. The principal vessel going to the limb might have been wounded, or some considerable branch. A small branch, divided close to the principal vessel, poured out blood furiously, as much so as if an opening in the coats of the artery itself were made by a portion being punched out, corresponding in size to the area of the branch. The division of a small branch at a distance from the source from which it springs is of little importance. It contracts, and soon ceases to bleed; but when it is divided close to the trunk, blood issues from it, as it would if an opening, equal in size to the calibre of the little branch, were made in the trunk itself.

The author noticed the risk of secondary hæmorrhage, in these cases, in order to show that some active measures were required to arrest the threatened danger. He objected to the operation of opening the sac, and securing the wounded vessel by ligatures, as patients who have lost a great quantity of blood are often sunken and lost by the sudden effusion of even a small quantity, and, after adducing some cases in point, he remarks that the danger must be enhanced when the tumour is so placed that there is no possibility whatever of making pressure on the trunk of the artery on the proximal side of the opening into it, or at the origin of a branch wounded close to where it is given off, as in the case of Mr. Seton. The cyst could not have been opened without great loss of blood, and it was not likely that a ligature on the branch would have permanently arrested the bleeding; indeed, it was stated by Dr. Allen that the trunk would not have held a ligature.

The author having asked, whether there is anything to bear a surgeon out in adopting this practice, adduced a number of cases to show that vessels bleeding outwardly, or pouring their contents into the tissues of a limb or region, have become permanently closed in consequence of the flow of blood being intercepted and weakened for a time by the application of a

ligature upon the principal arterial trunk. A man, thirty years of age, was wounded by a musket ball, which entered the left groin, and passed through the inside of the thigh. On "the tenth day from the injury, the slough from the anterior wound came away, and was followed by so frightful a hæmorrhage as to leave no doubt whence it proceeded, nor, from the wound being so high up, any alternative as to the means to be adopted for stopping it." The external iliac was tied, but the patient died of fever. No account is given of any dissection of the parts. "In this case the necessity of the operation is evident, and, as far as it went also, its success. Not a drop of blood was lost after it." So says Mr. Guthrie, who, it is to be presumed, conducted the treatment of the patient. We are left to conjecture what vessel was wounded. It may have been a branch, as likely as the trunk, and those who have attended to the description of the hæmorrhage in the case of Mr. Seton—to its impetuosity and amount—will bear the author out in this assertion.

The author observed that he has endeavored to show: 1st, That the case of Mr. Seton was one of great and immediate danger; 2nd, That some decisive step was required to be taken, and that without a day's delay; 3d, That very great risk would have been incurred in attempting to put a ligature on the wounded vessel; 4th, That there was ample authority for adopting the step which was had recourse to in the case. The dangers likely to arise from the operation were considered as weighing but lightly in the scale against those impending from the effects of the pistol shot. Inflammation of the peritoneum was scarcely taken into account in consulting on this case. Out of the forty-five cases of this operation, collected by Mr. Crisp, nine, or one-fifth, died, but not one of peritoneal inflammation.

Mr. Arnott observed, that though it was his opinion that the principle in surgery, that an artery should be always secured at the seat of injury, he thought in this particular case Mr. Liston had fully made out the correctness of in his practice. Mr. Liston did not see the patient until ten days after the receipt of the wound, at which period an aneurism had formed, and it was impossible to apply pressure to the artery above the wound. The question of practice generally in cases of wounds of arteries had not been opened by Mr. Liston, but he had confined himself to the details of this special case; and he, Mr. Arnott, could only repeat that, as much blood had been lost, and the patient was rapidly sinking, Mr. Liston acted in the most advisable manner.

Mr. Quain observed, with respect to the management of the case, that the whole subject resolves itself into two questions:—The first question being, was the operation necessary? On this point, he directed attention to the fact that, exclusive of Mr. Liston, other surgeons of experience and eminence in the naval service, had been engaged in the treatment of the case. Dr. Mortimer, a man of long experience in the public service, and other surgeons, were unanimous as to the necessity of the operation. They had watched the case, and, to say the least, it must be hazardous for others, who had no personal acquaintance with the condition of the patient, to call in question their judgment.

Then, as to the second question; namely, the operation being necessary, was the one performed the best suited to the circumstances of the case? On this point he entirely concurred in the view taken by Mr. Arnott. But it has been said that the vessel wounded was, after all, a "trumpery" one To this it is answered, that it was impossible to determine by dissection what artery was actually wounded. It has been shown, too, that in some cases, and under peculiar circumstances, arteries of small size have bled profusely, so as even to cause death. He himself had made reference in a published work to a case in which hæmorrhage from a small vessel wounded in an operation had been fatal. Mr. Stanley once told him that he had known a person die from the division of a small branch of the epigastric artery in an operation, as well as he remembered, for strangulated femoral

hernia. And another similar case is recorded. Moreover, it should be remembered that, in the case under consideration, profuse hæmorrhage is stated to have occurred; and a repetition of hæmorrhage was believed to be imminent. He concluded by observing, that under all the circumstances of the case as they are now before the society, he expressed the opinion that the operation performed was, notwithstanding the result, the right one.

*Med. Gaz., April* 24, 1846, *p.* 740.

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132.—ON THE DIAGNOSIS OF ANEURISM.—By T. P. TEALE, Esq., F.L.S., Surgeon to the Leeds Infirmary, &c.

[Recent events have no tendency to increase our confidence in the diagnosis of aneurism. Dr. Kerr and Dr. Engelhardt have lately erred in their diagnosis. Perhaps it arises from too great reliance being placed on one or two diagnostic signs, such as a diastolic impulse felt in all parts of the tumour, and a diminution in its size, when either it, or the artery on its cardiac side, is compressed. The former symptom occurred in a malignant tumour of the foot—described by Dupuytren, and the latter in a pulsating tumour of the femur, lately under the care of M. Nelaton. Mr. Teale adds]

In a case, under my own care, of a large serous cyst of the neck, extending downwards behind the clavicle to the vicinity of the large vessels, there was such a strong and apparently distensile impulse perceptible in all parts of the tumour, as to induce myself and several other surgeons, for a considerable time, to regard it as aneurism. In this case, the hands applied to the sides of the tumour were forcibly separated at each pulsation; and, by compression, the tumour was diminished in size (undoubtedly from a portion of its contents being forced below the clavicle towards the chest), and when the pressure was discontinued, the tumour gradually resumed, by pulsatile stages, its original size. Hypertrophy of the left ventricle, and dilatation of the abdominal aorta, tended still further to obscure the case. After the tumour had been reduced in size, its true character became apparent. The exploratory puncture, hitherto regarded as a test of aneurism, can no longer be received as such, since I have shown that a malignant cysto-vascular tumour of the femur, on two occasions, after an exploratory puncture, gave issue to a pulsatile column of florid blood, which was projected to the height of several inches.

*Mr. Teale's Retrospective Address, Prov. Med. Transactions, Vol.* 2, *New Series, p.* 94.

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133.—HÆMORRHAGIC DIATHESIS—TEN DAYS' HÆMORRHAGE AFTER THE EXTRACTION OF A MOLAR TOOTH.—By DR. CLAY, of Manchester.

[This patient, a boy 14 years of age, was found by Dr. Clay, labouring under profuse hæmorrhage in consequence of the extraction of the third molar tooth of the upper jaw; the gums and cheek were very much lacerated; various styptics had been applied, as N. of myrrh, F. ferri mur. arg. nitrat., &c., without stopping it. Dr. Clay used matico, secale, Ruspini's styptic, and even the actual cautery, without the slightest benefit. Constitutional treatment alone remained, and, in consultation, it was decided he should take the following mixture:]

℞. Plumbi. super. acet. gr. s; acid. acet. dil. ℥ss; syr. rhead. ℥ss; mist. camph. ℥v. M. ft. mist. ℥vi. Sumat æger coch. magn. duo omni tertia hora.

Thus, five grains of the acetate of lead were given every three hours, or nearly so, in addition to which pads, saturated with the liq. plumbi. diacet. were applied to the bleeding surfaces, with as correct a pressure as possible. Twenty-four hours passed under this treatment without improvement.

At a second consultation with several gentlemen, in addition to whom Mr. Bamber, a retired practitioner, and formerly the medical attendant of the family, was present, it was agreed to persevere with the acetate of lead mixture until the day following, continuing also the pads of lint saturated with the liq. plumbi. diacet., covering the pads also with finely pulverised matico. On the following morning, much to the satisfaction of all parties, the bleeding was checked; this was the tenth day, and up to this time he had taken nearly a drachm of the acetate of lead. The boy began to complain of pain in the stomach and head; it was therefore evident we could not proceed further with the acetate; and as the bowels had not been moved since its exhibition, it was determined to substitute the sulphate of soda, which the American physicians speak so highly of. A saturated solution was ordered to the extent of a wineglassful, every four hours, and in a very short time the bowels were acted upon. The bleeding was perfectly arrested from the tenth day, great care being taken for some time in removing the pads, and which were for several days moistened with the liq. plumbi. diacet. I have omitted to mention that the head was shaved when the constitutional treatment commenced, and that evaporating lotions were kept constantly upon it. From the tenth day the boy very gradually recovered, though extremely reduced. He is now (December 29th) comparatively well, and all the soft parts of the mouth are perfectly healed.

The case is an instructive one, as it serves to show how very little dependence can be placed on styptics, or, indeed, on any local application; in cases of hæmorrhagic diathesis, constitutional treatment alone is the best, indeed, the only, mode by which we can hope for permanent advantage.

*Med. Times, Jan.* 10, 1846, *p.* 293.

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134.—ON PULSATING TUMOURS OF BONE.—By T. P. Teale, Esq., F.L.S., Surgeon to the Leeds General Infirmary.

[These tumours so nearly resemble aneurisms that they are liable to be mistaken, even by the most eminent surgeons; they have, indeed, been named osseous aneurisms. M. Dupuytren regards them as accidental development of erectile tissue, generally implicated with the cancerous element. He has recorded many of these cases. Mr. Teale observes:]

A case of pulsating tumour of the ilium, supposed to be aneurism, recently occurred at St. Bartholomew's Hospital. Mr. Stanley describes the tumour as pulsating throughout its whole extent; not with a thrill or vibration, but with a deep heavy beat of aneurism; and a bellows-sound was distinctly audible. A ligature was applied to the common iliac artery. The patient died on the third day, from peritonitis. The tumour on dissection, was found to be composed of a spongy tissue, with cells and convoluted vessels distributed through it. In the wall of the left ventricle there was a medullary tumour, of the size of a filbert. After relating the case to the Medico-Chirurgical Society, Mr. Stanley alluded to several others, in which tumours originating in the bones had been mistaken for aneurism. Two such had occurred at St. Bartholomew's Hospital: one was an encephaloid tumour of the humerus; the other a morbid growth, consisting of a soft fibrous and dense osseous structure, originating in the femur, and supposed to be popliteal aneurism. Mr. Stanley also referred to a case of great interest, which had ocurrred to Mr. Guthrie. In this instance, a medullary tumour, situated in the gluteal region, presented so decidedly the characters of aneurism, that it was regarded as such by Sir Astley Cooper and other surgeons, and accordingly Mr. Guthrie applied a ligature to the common iliac artery.

Intimately connected with this subject, but not coming within the designation of pulsatile tumour, is a case which recently fell under my own care.

A young man presented himself at the hospital, having a tumour which filled the popliteal space and projected a little anteriorly above the inner condyle of the femur. It was generally firm, but elastic in some parts, and conveyed a suspicious feeling of the presence of deep-seated fluid. No pulsation could be detected in it, nor was its size altered by compressing the femoral artery, and no unnatural sound was audible. I determined upon making an exploratory puncture, which being done, a pulsatile column of florid blood was projected at the height of seven or eight inches. On the following day, in consultation with my colleagues, Mr. Smith and Mr. Hey, the puncture was repeated in another part of the tumour, when a pulsatile column was again projected, and several ounces of florid blood rapidly escaped. Notwithstanding this phenomenon, we were inclined to the opinion that the disease was one of the more vascular forms of carcinoma; but we nevertheless thought it prudent to tie the femoral artery, but with no other effect upon the tumour than the arrest of its growth for about a fortnight, after which time it rapidly increased and attained an enormous size. The patient could not be induced to submit to amputation. After death, which occurred four months after the ligature was applied, the tumour was found to consist of numerous cysts, many of which were filled with imperfectly coagulated blood, others with turbid serum, and in some parts masses of encephaloid carcinoma were seen.

*Prov. Med. Transactions, Vol. 2, N. S., p. 72.*

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135.—ON HÆMORRHAGE FROM WOUNDED ARTERIES.—By J. G. Guthrie, Esq., F.R.S., &c.

I do not hesitate in considering the following as three important facts, first demonstrated and proved during the war in Portugal, Spain and France, and that nothing has since occurred to impeach their accuracy.

1. That an artery as large as the femoral is capable, when divided, of taking on certain processes, which will cause a suppression of hæmorrhage from its upper end, and which suppression is usually permanent. 2. That the bleeding from the lower end of the same vessel is less certainly and less permanently restrained, and not by exactly similar process; the blood issuing from the lower end of the femoral artery, being for the first few days of a venous colour. It is less so from the axillary artery, in consequence of the collateral circulation in the upper being more free than in the lower extremity, and the change of colour is sometimes not perceptible in the smaller arteries of the forearm, although it is generally so in those of the leg. 3. That this bleeding from the lower end of the vessel, which is more or less of a venous colour, and issues in a continous stream, may be restrained by compression properly made on, and in the course of the lower part of the wounded artery; but that in no instance should recourse be had to a ligature on a distant part of the artery above the seat of injury, until every other possible effort to arrest the hæmorrhage has failed.

*Med. Times, April 25, 1846, p. 54.*

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## ORGANS OF RESPIRATION.

136.—ON TRACHEOTOMY.—By R. Carmichael, Esq., Dublin.

[Mr. Carmichael has presented to the Pathological Society of Dublin, the tranchea and larynx of a child, two years of age, in whom he performed this operation. The child had inhaled the steam from the spout of a boiling tea-kettle, and Mr. Carmichael sent him to the Richmond Hospital, in order to afford to the little sufferer a chance of life, by performing the operation of tracheotomy upon him.]

Mr. Carmichael remarked, that this operation is very difficult to perform on a child, the trachea being constantly in motion, and the part in which the opening is to be made having the thyroid gland just above and the thymus immediately below it, while it frequently happens that there are also large branches of vessels passing across in front of the trachea. The best mode of operating is to lay hold of the trachea, when exposed, with a strong hook, and having then drawn it forward, cut out a portion with a pair of scissors. There is another mode of operating with an ingenious instrument recently invented by Mr. Milliken, by means of which the operator can, at the same moment, both fix and hook the trachea, and then, by pushing forward the instrument, can cut out a circular portion of the cartilaginous rings. Mr. Carmichael mentioned that he had twice before performed tracheotomy with success, in cases similar to the present. In one of these, which had occurred some years ago, he had the assistance of Mr. Adams and Mr. Smith, and so complete was the recovery in that operation, that the patient's voice was not injured, and he is now a distinguished member of the choir of Christ Church Cathedral in Dublin. In the present instance, the boy lived but twelve hours after the operation. In the examination after death, it was found that the glottis was closed, and the arytenoid cartilages were covered with lymph; the lungs were sound, no blood was lost during the operation. Besides the recent specimen there was on the table, a coloured cast of the parts, made by Mr. R. W. Smith, representing accurately the appearances immediately after death.

Mr. Carmichael produced to the meeting, and described, the instrument for tracheotomy to which he had alluded, being an improvement upon that originally invented by Mr. Read, in whose intrument the cutting part was in the same plane with the axis of the handle, in consequence of which formation the depth at which the trachea lies below the external incision, would not permit the instrument to be so used as to excise any portion of the trachea. In the instrument shown by M. Carmichael, the cutting part forms a curve or obtuse angle with the handle, a construction which obviates the objections to the former instrument. The ease with which this cut out a circular portion of the rings was demonstrated to the meeting, on the trachea of a sheep. Mr. Carmichael recommended this instrument to the notice of the profession.

*Dublin Quarterly Jour. of Med. Science, May*, 1846, *p.* 508.

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137.—TRACHEOTOMY IN ACUTE DISEASES OF THE LARYNX OR TRACHEA.

M. Trousseau has recorded the results of his experience in 121 cases of croup, in which tracheotomy was performed. He advocates the rather early performance of the operation. During the operation, if he finds it impossible to avoid the thyroid veins by careful dissection, he divides them without tying, since the hæmorrhage always ceases on the introduction of the canula. As soon as he has completed the incision into the trachea, he introduces an instrument to keep the edges of the wound apart, raises the child from the recumbent posture, and waits for a few moments until the hæmorrhage ceases. He then, if the case is very urgent, introduces the canula; if the symptoms are less pressing, he allows the dilator to remain for some time, in order to afford opportunity for the expulsion of the false membranes, while he further endeavours to favour their discharge by dropping water into the bronchi, and by sponging out the trachea repeatedly. After a time the canula is introduced, and often as the respiration becomes difficult, it must be removed, if there be any reason for referring the dyspnœa to any obstruction of the tube. Usually it is sufficient to change the canula twice in twenty-four hours. At the time of withdrawing the canula the dilator should be employed; and while the edges of the wound are thus kept apart, the trachea should be sponged out, and the medicated ap-

plications employed. In the course of two or three days, the use of the dilator becomes unnecessary. If the case should advance favourably, the same sedulous care to keep the canula free becomes unnecessary after the fourth or fifth day; and if the air should appear to pass at all by the larynx, the canula may be incompletely closed by a plug of cork. If respiration still go on well, the size of the tube may be reduced every day, until it is finally removed, usually from the tenth to the thirteenth day. M. Trousseau attaches great importance to the use of local remedies. These consist in dropping into the air-passages from fifteen to twenty drops of a solution of about five grains of nitrate of silver in an ounce of water, and at the same time cleansing the trachea with a sponge dipped in the same solution.

The results, however, of his treatment are by no means brilliant. M. Trousseau has operated in 112 cases, in twenty-seven of which the patients survived; it cannot, however, be fairly assumed that the life of the patients in all these cases would have been sacrificed but for the operation, provided active treatment of the ordinary kind had been employed.

*Prov. Med. Transactions. Vol. 2, N.S., p. 109.*

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138.—CASE OF LARYNGOTOMY.—By J. F. Crookes, Esq.

[An interesting case of œdema of the glottis, successfully treated by laryngotomy, is reported in the Medical Gazette. The patient was a female confined in Bridewell, who swallowing some bread, a portion of unmasticated crust lodged in the œsophagus, which gave her great uneasiness, and induced her to put her fingers down her throat, to endeavour to remove it; this she accomplished, but remarked that in doing so either the crust or the fingers had torn some flesh in the throat: difficulty of breathing ensued, which after a lapse of a few hours, threatened suffocation; the face was very livid, and a comatose state speedily supervened. Mr. Crookes at once decided upon the operation, and describes it as follows:]

I performed the operation of laryngotomy a little before noon. It was done without much difficulty, although the shortness and fatness of her neck made her an unfavourable subject for the operation. After a free incision of the integuments had been made, the loose cellular tissue was readily torn through with the fingers, and the crico-thyroideum membrane reached. The distended thyroid veins were easily avoided, and the whole amount of hæmorrhage was trifling. Whilst the membrane lay clearly exposed between the tops of my fingers, Mr. Holding punctured it at my request, but the opening thus made was very small, and the quantity of air admitted was insufficient. As the lividity of the face, however, appeared slightly to diminish, I deemed it prudent to await the arrival of the proper tubes, meanwhile carefully commanding the opening with my fingers. As soon as the tubes were brought, I enlarged the opening, and introduced one, and within a second or two afterwards the lividity of the face entirely disappeared, and the poor woman was restored to perfect consciousness.

[A few days after the operation, a very small quantity of air passed through the wound and this principally on coughing. Slight pain in the chest supervened, which was removed by the application of a blister, and in nineteen days after the operation the wound was nearly healed.]

*Med. Gaz., Nov. 28, 1845, p. 1342.*

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139.—CASE OF HANGING SUCCESSFULLY TREATED BY THE AFFUSION OF COLD WATER.

[This case is reported by Mr. Noyce, in the Medical Gazette of January 9th. It appears that the patient had been suspended at least two minutes,

and respiration had ceased six minutes, before attempts at resuscitation could be made. The heart's action continued, but was very weak; pulse 80, countenance pale, conjunctiva red. Mr. N. attempted to perform artificial respiration, but the pair of bellows were so much out of order, that he could not effect his object. He then determined on the application of cold water, and describes its effects as follows :]

On the first affusion I perceived a gurgling in the throat, and renewed the operation; a slight inspiration directly succeeded. The affusion was frequently repeated, and was followed each time by an inspiration, each more perfect than the last, until the lungs were fully inflated; respiration then continued regularly, accompanied by frequent yawning and sighing. I bled him to 16 ounces, which restored him to consciousness, and he has had no bad symptoms since, excepting a severe pain at the back of the neck, which shortly passed off, and he remains quite well.

*Med. Gaz., Jan.* 9, 1846, *p.* 75.

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## ALIMENTARY CANAL.

140.—ON THE OPERATION FOR HARE-LIP.—By T. P. Teale, Esq. F.L.S., Surgeon to the Leeds Infirmary, &c.

[M. Malgaigne has lately modified the operation for hare-lip, by which he prevents the unsightly fissure left by this operation. He cuts in the ordinary manner from above downwards, but stops before he has detached the cut-piece; he does the same on the opposite side. After uniting the two margins of the cleft in their whole extent, except towards their free borders, the flaps, formed as above-mentioned, are approximated face to face, and the operator so far shortens them as to prevent a furrow. Mr. Teale observes that]

Mr. Smith, of Leeds, has occasionally adopted a modification of M. Malgaigne's operation with the greatest success. He makes his incision from above downwards, in the ordinary way, as far as the red margin of the lip, through which part he cuts, by directing the incision towards the median line, so that the inferior part of the incision forms nearly a right angle with the upper portion. I have lately operated in this manner. By this modification of the operation for hare-lip, a much more symmetrical lip is formed than is usually observed after the ordinary mode of operating.

The age for performing the operation in cases of congenital hare-lip, has formed the subject of a communication to the Royal Academy of Medicine, by Professor Dubois, who advocates an early operation, and has brought forward several cases in support of the proceeding. The patients were subjected to the operation at the following ages :—Three on the second day after birth; one a few days after; one on the fifth; and one on the fifteenth. Four of the infants were allowed to take the breast; two were brought up by the hand; all the cases were successful. M. Dubois states, that if the child be sickly, and the hare-lip complicated with division of the bones, the operation ought to be deferred; but that when the child is strong and healthy, and the fissure only affects the lip, it ought to be performed early. Professor Roux said, it would be unfortunate if, on the authority of Professor Dubois' name, it should be concluded that the operation ought to be performed early in every case. The facts recorded by him are relative to simple uncomplicated hare-lip, and in this respect M. Roux coincided in a great measure with him, although he is always fearful of dangerous results consecutive to operations in very young children, the more so, as he has witnessed several which terminated fatally.

Mr. Liston recommends that the operation be deferred until the first set of teeth have appeared. "When the features are enlarged somewhat," he observes, "you have more ground to work upon; you can then put the part neatly together, and you can almost answer positively for the union taking place." *Prov. Med. Transactions, Vol.* 2, N.S., *p.* 84.

141.—OBSERVATIONS ON CLEFT PALATE AND ON STAPHYLORAPHY.—By W. FERGUSSON, Esq., Professor of Surgery in King's College, London.

[In Retrospect, Part XI. p. 118, will be found a short account of this operation. But we think that its importance entitles it to a second and more complete notice in our pages, which we take from Mr. Fergusson's paper, lately published in the Medico-Chicurgical Transactions. The observations of Graefe and Roux in Europe, and Warren in America, first showed that this congenital deformity may be treated on the same principles as the management of hare-lip. It was first done in England by Mr. Alcock, in 1821, but the amount of experience is not as yet in just proportion to that acquired by surgeons in other parts of the world. Mr. Fergusson observes that:]

The fissure in cleft palate may be such as only to divide the uvula, or it may extend forwards through the soft and hard parts as far as the lips, in which latter instance there is generally a hare-lip as well. In the uvula, soft palate, and even through the palate bones, as also a portion of the superior maxillæ, the fissure is invariably in the medial line, but when the alveoli in front participate in the malformation, it is somewhat to one side. In certain instances the fissure is double in front, when the whole of it may be likened to the letter Y; the two lines in front leaving between them the intermaxillary bone. I shall only advert to the advantages which may be obtained in instances of single or double fissure extending through the entire hard palate, and when accompanied with hare-lip, by the judicious application of compresses, and also by the early performance of the operation for hare-lip. It is well known that a gap, however wide, may, if treated in early life, be brought to the condition of a narrow chink, by the means alluded to; but we have no control over the fissure in the soft parts, save an artificial palate, unless by the operation of staphyloraphy.

[It is only of late that it has been thought possible to remedy the cleft in the hard palate, except by plastic operations, succeeding the union of the soft parts. Dr. Warren says it may be closed in the same way as the soft velum; his observations, however, have been but little noticed in this country. With respect to this, Mr. F. remarks:]

The remarkable feature in this gentleman's operation is, that he dissects the soft tissues from the bones on each side of the fissure, carrying his knife towards the alveoli to such an extent as to make a flap sufficiently broad to join its fellow in the medial line; he then pares the edges of the cleft in the soft palate, and stitches the whole wound between the uvula and the anterior extremity, wherever it may be. If union takes place, the entire fissure is closed, and Dr. Warren has not alluded to any inconveniences or evil results from thus denuding the bones. Doubtless a considerable amount of reunion takes place, and towards the inner margins of the bones, as also on the upper surface of the soft portion in the middle, there will be a cicatrix, analogous to mucous membrane. Taking the vault of the hard palate in its natural condition, as being nearly semicircular, it is evident that by bringing down the soft parts on each side towards the tongue, ample flaps may be obtained, so that there would be little or no dragging by the stitches. In the cleft condition this proposition is still more apparent, especially if the malformation extends through the alveoli, for then the surfaces of the hard palate slope upwards like the two sides of a triangle, and nearly join in the floor of the nostril.

[Before adverting to the incisions necessary in this operation, Mr. Fergusson notices the movements in the soft flaps of those persons whose palate is cleft. He says:]

As we look into the open mouth, the flaps may be seen under four different conditions. First. If the parts be not irritated in any way, the gap will be quite conspicuous, the lateral flaps will be distinct, and the posterior nares, with the upper end of the pharynx, will be observed above and be-

hind. Second. If the flaps be touched, they will in all probability be jerked upwards by a motion seemingly commencing at the middle of each. Third. If the parts be further irritated, as by pushing the finger against them into the fissure, each flap is forcibly drawn upwards and outwards, and can scarcely be distinguished from the rest of the parts, forming the sides of the nostrils and throat. And fourth, if the parts further back be irritated, as in the second act of deglutition, the margins of the fissure are forced together, by the action of the superior constrictor muscle. All these conditions and movements are, in my opinion, very readily accounted for. In the first instance, the parts may be deemed in a quiescent state; in the second, the levatores palati are called into play, and move the flaps as described; and in the third these muscles act still more forcibly, and the palato-pharingei will join in drawing the parts outwards. The fourth condition I need not again describe.

If the free margin on one side of the fissure be seized with the forceps, drawn towards the mesial line, and the flap be then irritated, it will be drawn upwards and outwards with remarkable force; this movement, it is evident, can only be effected by two muscles, the levator palati and palato-pharyngeus. These muscles, then, I consider the chief mechanical obstacles to the junction of the margins in the mesial line. Hitherto I have taken no notice of the action of the circumflexus, or tensor palati. I am inclined to think that its action is very limited, and, probably, as the dissection in my possession would indicate, is greater upon the parts outside the posterior pillar, than on those contiguous to the fissure. Neither have I alluded specially to the action of the palato-glossus, because, though it might with a feeble power incline the soft palate downwards, its influence, as regards the practical view I am now taking, is completely counteracted by the more powerful muscles connected with the palate above.

[Mr. F. next remarks on Mettauer's operation, and thinks the long incision through the mucous membrane will not answer, inasmuch as it does not reach any muscular fibres of importance. The same objection he also makes to the incisions of Dieffenbach and Pancoast. Liston's, he thinks, has no reference to the division of muscular fibres at all, and Roux's method, although it removes some muscular fibres, is not sufficiently effectual. Dr. J. M. Warren does not divide any of the muscular fibres, he only separates the tonsil from the posterior pillar. Mr. Fergusson then remarks that,]

So indefinite has been the language used by all parties, with reference to the object of these different incisions, that I believe myself justified in stating that a distinct proposal, founded on anatomical and physiological data, has never yet been made. I propose, as an important accessory to the operation of staphyloraphy, that the surgeon should, on strictly scientific grounds, and in accordance with the modern principles of myotomy, so conduct his incisions as to destroy all motory power in the soft palate for the time being, and thus permit that repose of the stretched velum which is so essential to a happy result; in other words, I advise the division of the levator palati, the palato-pharyngeus, and the palato-glossus muscles. The first of these steps I deem of the greatest importance, the second scarcely less so, and the third may be effected or not, as the circumstances seem to demand. It will be observed, that by dividing the above-named muscles, all motory influence in an outward, upward, or downward direction, is cut off, and the only muscles which can act in anything like a direct manner upon the soft palate are the superior constrictors of the pharynx. These, however, will only act during deglutition, and even then their tendency will be to throw the parts closer instead of separating them.

[These fibres re-unite and leave no inconvenience; indeed, the incisions necessary for their division, are less than those already practised. Mr. Fergusson describes his operation thus:]

The steps which I follow are these:—With a knife whose blade is somewhat like the point of a lancet, the cutting edge being about a quarter of an

inch in extent, and the flat surface being bent semi-circularly, I make an incision about half an inch long, on each side of the posterior nares, a little above and parallel with the palatine flaps, and across a line straight downwards from a lower opening of the Eustachian tube, by which I divide the levator palati muscle on both sides, just above its attachment to the palate. Next I pare the edges of the fissure with a straight blunt-pointed bistoury, removing little more than the mucous membrane: then, with a pair of long blunt-pointed curved scissors, I divide the posterior pillar of the fauces, immediately behind the tonsil, and, if it seems necessary, cut across the anterior pillar too; the wound in each part being about a quarter of an inch in extent. Lastly the stitches are introduced by means of a curved needle, set in a handle; and, the threads being tied so as to keep the cut edges of the fissure accurately in contact, the operation is completed. These different incisions may be made in the order here detailed, or possibly it may be found most convenient to divide the palato-pharyngeus first, next the levator palati, and then to pare the edges when the muscular action has been taken off.

Each of these steps requires some little separate notice. The first incision, it will be remarked, differs from all others hitherto proposed, and is founded on consideration of the anatomy of the parts. The levator palati, I have no doubt, is the main obstacle to the approximation of the margins, and is the principal cause of unsteadiness in the velum during the operation and after it has been accomplished. Its division may be effected through the method above recommended, but should the flap appear tense after the knife has been used, the incision may be further extended in case the muscle may not have been cut completely across. The extension of the incision, even without reference to the division of muscular fibres, will aid greatly in relaxing the sides of the palate. In many instances, I believe that the levator muscle might be divided by a submucous incision, by plunging the blade through the mucous covering, and then moving it freely across the muscle.

The instructions already given, will, I imagine, enable the operator to reach the muscle with facility. I may add, however, that the incision should be made about midway between the hard palate and the posterior margin of the soft flap, just above the thickest and most prominent part of the margin of the cleft. The instrument used for this step is of peculiar construction. No ordinary surgical knife could have readily effected the purpose, as it is scarcely possible to apply the point of a common scalpel or bistoury to the part in question, excepting through the nostril in front, a proceeding which, in my opinion, would not answer so well as that recommended. The idea of this shape of knife was first suggested to me by a perusal of Dr. J. M. Warren's description of his mode of dealing with the hard palate. I use a variety of blades with long and short curves, each to suit the particular condition of the parts, and believe that these will be found the most convenient instruments for separating the soft tissues from the hard vault, according to Warren's process; indeed, I know of no others used among the surgeons in this country which could effect this purpose. In paring the edges I am indifferent as to which side I begin with. If it be the right side I usually stand behind the patient—a favourite attitude with the dentist, and commence to cut either at the end nearest me, or that furthest off, as may seem most convenient.

Still standing behind, with the patient's head on my chest, I pare the left side from before, backwards, or the reverse, as may appear best; or possibly, I may conduct these steps while standing in front of the patient, whose head is supported by an assistant; but I believe that it will be found very advantageous to conduct many of the steps of the operation while standing behind and looking over the face, as it were into the mouth. In any way, if the incisions on the edges are begun at the uvular extremity, something must be done to keep the parts steady and tense, else great difficulty will be

experienced in carrying the knife along. I prefer a long narrow forceps, with the blades having hook-like extremities, and either pull the points towards me or push them back, as may seem most advisable. I give preference to a straight probe-pointed bistoury, as the best instrument for this part of the operation. When the edges are pared, I am in the habit of again using the curved knife which has just been described. The edge at some parts will appear so thin that one may doubt whether union is likely to take place when two such surfaces are brought into apposition. To increase the breadth or depth of such parts, I run the point of the curved blade along the middle of the cut surface, and thus, when the edges are brought into contact, they are expanded, and the depth from the nasal surface to the lingual is increased, whereby there is greater probability of union. I have succeeded in this way in closing a portion of a gap where the edges were originally not thicker than a sixpence. In dividing the pillars of the fauces, the uvula, or the posterior margin of the velum, should be seized with the forceps, and so drawn forwards as to put these parts on the stretch. The relaxation of the flaps will be the criterion as to the muscles being divided. Judging from the anatomy, and what I have seen in the living body, I should say that it will seldom be necessary to meddle with the anterior pillars.

After having used or examined most of the contrivances for passing the threads, I give decided preference to the curved needle set in a handle, the eye being near the point, so that the thread may be seen and laid hold of readily as soon as the parts have been transfixed. The first three or four stitches I now always introduce thus:—I pass the curved needle from below, straight upwards, being indifferent as to which side I begin with. And then, having carried the eye towards the mesial line, so that the ligature can be seized with the forceps and drawn down into the mouth, the needle is withdrawn, armed again with a more slender thread, and the same steps are repeated on the opposite side of the cleft. The thread last introduced is next fastened to the first, and then drawn back throughout its course, whereby the first thread, which is the one intended to close the gap, is brought into its proper position. After three or four stitches have been tied, should more be required, the curved needle can readily be pushed from one side to the other. I imagine that the difficult process of introducing the threads is greatly facilitated by the preliminary division of muscles which I recommend. Having, on some occasions, when the ligatures had been introduced before the edges were pared (the course followed by Roux), experienced annoyance from the threads being cut during the subsequent steps, I advise that they be not applied until the margins have been cut. A stout silk or flaxen thread is, in my opinion preferable to the ligatures of leaden wire used by Dieffenbach, although these have been much applauded by some; and the surgeon's knot, as advised by Professor Smith, of Maryland, and Dr. J. M. Warren, I have found sufficient to keep the wound close, until the second noose had been cast. The difficulty of keeping the first noose steady, has often been alluded to: the lead ligatures, by being twisted together, obviate this difficulty; and, recently, Sir Philip Crampton has proposed a most ingenious device for closing the stitches, which consists in running a small perforated bead of soft metal up along the two ends of the thread, which, when the gap is closed, are then fixed by squeezing the metal. I think, however, that the surgeons' knot answers all the purpose desired; and, in my own operation, there is so little dragging, in consequence of the flaccid condition of the palate, that I have occasionally found the common knot answer perfectly. For the same reason, too, I have not thought it necessary to resort to the use of any of those pieces of mechanism intended to facilitate the tying of a knot in a deep-seated part; for, after the muscles of the palate have been divided, the soft flaps can be drawn downwards and forwards, with all requisite facility. I believe it better, rather to exceed the proper number of stitches than to have too few, and I especially recom-

blades, there are beneath these, attached by means of screws, a pair of blunt supplementary blades, whose flat surfaces come in contact with the substance of the uvula, and seize it while it is being detached by the cutting blades.

*Dublin Med. Press, May* 13, 1846, *p.* 290.

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144.—REMOVAL OF THE TONGUE BY LIGATURE—NEW PROCESS.

A woman, aged thirty, apparently of good constitution, who had already been operated upon by M. Chassaignac, for cancer of the tongue—is the subject of the following narrative. In consequence of a return of the disease, she was re-admitted under the care of M. Blandin. On examination, it was discovered that the tumour occupied the anterior three-fourths of the right side of the tongue, and that it exhibited all the characters of cancer. In consequence of the difficulty that would probably have been experienced from troublesome hæmorrhage, M. B. preferred, for its removal, the ligature instead of the knife. The following is the method he pursued:—A needle, with a fixed handle, and of the shape of a small spatula, slightly curved in its flat surface. and with the eye near its point, was armed with two ribbon-shaped threads, the one white and the other black, so as to be easily distinguished from each other in the course of the operation. The white thread was passed through the eye in such a way as to leave its two ends of equal length; whilst the black thread was introduced but a short way, leaving one end much longer than the other. The needle thus armed was passed below the tongue, or between the latter and the floor of the mouth. The index finger was introduced, so as to serve as a conductor for the instrument, which was passed through the tongue in a direction from below upwards. and from before backwards, towards the healthy portion, that is to say, between the base of the tongue and the posterior edge of the tumour. On the point of the needle emerging on the dorsum of the tongue, the operator seized the thread by the loop, and drew it towards him; he then divided it with a pair of scissors, so that the thread, formerly in one, now formed two. These two threads, one end of which being under the tongue, and the other on its dorsal surface, were directed, the one from before backwards, the other transversely, and the ends tied in a firm knot, so that they thus constituted two ligatures, the one, antero-posterior, and the other, transverse to the healthy limits of the disease. During these manœuvres with the double white thread, the needle still armed with the black thread was allowed to remain in its place; the operator now withdrew the instrument half through the thickness of the tongue, and pushing it anew caused the point to emerge at the left edge on a level with the base, where he seized the small end of the black thread. He then withdrew the needle entirely, and, by means of a knot, fixed the two ends of the thread round the inferior surface of the tongue. In this way, then, the tongue was strangulated in every direction, by means of three ligatures confined to the diseased portion, that is to say, one antero-posterior, a second transverse, a third horizontal to the inferior surface, and all this was accomplished by two threads, and two punctures of a needle directed in the same course in the form of the letter Y. This description, at first sight, may not be easily comprehended, but if followed out, with a needle in hand, it will be found ingenious, simple, and important; we have just repeated it on a fold of paper made so as to resemble the tongue; and thus a clear idea of it may be obtained. The three knots were fixed between the dental arches. On the third day, the tumour had become mortified; on this, the tenth day from the operation, the ligatures have not yet separated, the tumour is mortifying in the mouth, and the patient suffers much. Chlorinated washes have been prescribed.

*In France*, at this time, the generally admitted theory in regard to cancer, *is, that it is* a disease local in its origin. And thus the treatment is con-

fined to the locality by means of cutting instruments or caustics; whilst the constitutional state is almost wholly overlooked. And what happens? In the course of a short time there is a relapse. An operation is again had recourse to, if this be possible, and so on after each new relapse, till the constitutional effect becomes evident. It is then said there is a cancerous diathesis, and the patient is declared lost. We have always protested against this mode of viewing the subject; and relying on the authority of celebrated men, and facts easy of verification, we have stated clearly the general therapeutical indications required in the different periods of such cases. Most practitioners, however, disrelish such reflections, and prefer wandering in blind routine, to adopting and applying the new dynamic views. This is very sad; for the question is one of life or death to a number of unhappy beings, who might be either saved, or at least, relieved. We consider it unnecessary to repeat the facts and reasons we have so often dwelt upon; surgeons do not believe them, have never tried them, and prefer doing nothing.—*Annales de Therapeutique*, Dec. 1845.

[From the next number of the Annales (January, 1845), we find that the subject of the preceding case has made a good recovery ]

The portion included within the ligature has come away, the wound has healed, and no hardness can be felt either in the cicatrix or elsewhere. Nearly a third of the mass of the tongue has been removed. In consequence of the operation, the healthy portion of the tongue is now firmly adherent to the floor of the mouth, at the spot where the ligature was passed; its point is turned laterally towards the cicatrix, so that the organ, when lying in the mouth has the appearance of the letter S: it is nearly immoveable. Its point, however, is free towards the extremity, and is capable of executing certain motions. Deglutition is not in the least impaired, but the voice has lost its clearness; the alteration in this respect, however, is not great, and the patient is too happy to be freed from her painful complaint, to pay much attention to these slight inconveniences, which will, no doubt, diminish with time. We know, indeed, from many previous facts, that after removal of the tongue, the voice is, in the first instance, somewhat altered, but that it afterwards regains its clearness; in consequence of a particular modification which the larynx undergoes in its position, the organ rises with the pharynx, and the posterior stump of the tongue is carried forwards, and thus adapted to the purposes of deglutition and articulation.—*Annales de Therapeutique*, Jan. 1846.

*Monthly Jour. of Med. Science, March*, 1846, *p.* 206.

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145.—ON THE RADICAL CURE OF HERNIA.—By T. P. Teale, Esq., F. L. S., Surgeon to the Leeds General Infirmary, &c.

[The radical cure of hernia is effected either by causing the closure or destruction of the sac, or by indirectly promoting the closure of the hernial aperture; but Mr. Teale observes, that unless both these effects are produced, little advance towards permanent cure is made. The substitution of a layer of peritoneum across the hernial aperture, affords a resistance so slight, as scarcely to possess any power in preventing a future hernial descent. The use of well adapted trusses promotes the radical cure of hernia, by effecting contraction, or diminution of the aperture in the aponeurotic or muscular structure. The cicatrix left after the operation of Desault, may, for a time, mechanically prevent protrusion, or allow the aperture to contract; and the operation of M. Gurdy, in which the opening was filled with an organized plug, appears to have succeeded in the same manner.

The means employed for effecting the radical cure of hernia, by promoting closure or contraction of the hernial sac, are, excision of the testicle; incision of the sac; excision, suture, and cauterization of the sac·

ligature of the sac after incision of the integuments; acupuncturation; and insertion of gold beater's skin in the sac. These operations have succeeded in destroying or closing the hernial sac, but they do not prevent a fresh hernial descent.

The best means for promoting contraction or closure of the hernial aperture, are trusses; ligature of the sac and its envelopes; and the cutaneous plug. With respect to trusses, Mr. Teale observes:]

Our object, then, in attempting the radical cure of hernia by trusses, should be to secure perfect retention of the viscera, without exercising injurious pressure. If too high a degree of pressure be employed, inflammation or irritation may be produced, and may require the suspension of the treatment. From undue pressure operating for a long time, but less powerfully, the walls of the abdomen sometimes become atrophied, and their strength diminished. When the pressure is too much concentrated, by the use of pads of small size and great convexity, in large inguinal herniæ, which have considerably dilated the inguinal canal, the aponeurotic structures of the canal are thereby stretched, and, in time, may become actually elongated, and consequently weakened, by the pressure. In attempting, then, to produce a radical cure by the use of trusses, it is necessary to guard against such degrees and modes of pressure as would excite irritation in the parts compressed, or produce either atrophy or elongation of aponeurosis and muscle. The best means calculated for promoting perfect and salutary retention of the viscera, are such as are generally most efficient in the palliative treatment of hernia.

[The operation by ligature is not justifiable, seeing that it causes so much pain and loss of life. Two ways of introducing the cutaneous plug have been adopted, meriting further trial. Dr. Jameson, of Baltimore, detaches a piece of integument from the neighbourhood of the ring, and introduces it into the aperture. The plan of M. Gerdy, which has also been followed by others, has for its object to draw the loose scrotal integument into the inguinal canal, and to cause adhesive inflammation between the invaginated integument and the wall of the canal. Mr. Teale adds:]

Mr. Gerdy has attempted to close the hernial aperture by carrying a fold of the scrotal integuments upwards into the inguinal canal, and retaining them invaginated in that situation by one or more sutures. The principle of the operation was probably suggested by the result of two cases recorded by Arnaud, wherein during the reduction of an inguinal hernia, a fold of skin was carried up and drawn into the ring; adhesion took place, and the cure was permanent. The instrument employed by M. Gerdy in this operation is a curved needle fixed in a handle, and concealed in a sheath, along which it may be moved. The needle is pierced near its point by two apertures, and along its convexity between the two openings is situated a groove deep enough to lodge a double ligature of waxed silk. The operation is performed in the following manner:—The patient being placed in the horizontal position, the surgeon, having ascertained that the hernia is perfectly reduced, pushes with the forefinger of the left hand a blind pouch of integuments upwards into the inguinal canal, anterior both to the cord and the hermial sac.

The point of the needle, armed with the ligature, is then guided along the finger to the bottom of the pouch, and by depressing the handle is brought out through the anterior wall of the inguinal canal. One end of the ligature is then laid hold of by an assistant, and, the point of the needle being withdrawn into the pouch, a second similar perforation is effected at a few lines' distance from the previous puncture. In this manner both ends of the ligature are carried from the inside of the pouch or invagination through the inverted skin, the tendon of the external oblique, and the integuments of the inguinal region, where they are tied over a piece of bougie. One or more of these stitches are made, according to the size of the opening. Caustic ammonia is then freely applied to the internal surface of the pouch,

and the operation is concluded by covering the parts with a slight compress, spread with common cerate. About the third day a copious suppuration is established, and at this period the sutures are removed; but this removal of the sutures should depend only on circumstances which appear to warrant it. After the operation, adhesion gradually takes place between the invaginated integument and the sides of the inguinal canal; whilst at the same time the pouch itself becomes obliterated by the process of granulation set up by the caustic. Within the fifteenth or twentieth day the suppuration ceases, and the dilated inguinal canal is found completely blocked up by a strong thick plug, the presence of which is indicated by an external projection, which may be distinctly felt beneath the skin and tendon. This gradually disappears, until no trace of the operation remains, except a trifling scar at the entrance of the pouch, and a slight elevation and shortening of the scrotum on that side. The recumbent posture should be maintained for about a month after the performance of the operation, and a truss worn for three or four months after the patient leaves the bed.

Mr. Bransby Cooper, in performing M. Gerdy's operation, pushed a portion of scrotal integument before the forefinger of his left hand, through the external ring, into the inguinal canal, as high as he could pass it, and, upon the finger, introduced a director. A long needle fixed in a wooden handle, and having the eye near its point armed with a double silk ligature, was then carried along the director to the very extremity of the invaginated skin, and was pushed through the tendon of the external oblique muscle and the skin, and made to come out an inch and a half above Poupart's ligament; one end of the silk was then retained by an assistant, and a needle drawn back again into the inguinal canal along with the other end; when it was again pushed through the abdominal parietes, in a similar manner as before, about four lines distant from the other end of the thread, including necessarily so much of the skin between the two silks, which were now tied over a piece of bougie.

M. Signorini has modified M. Gerdy's operation by using three hare-lip pins, and the twisted suture, moderately tight to fix the invagination. The pins and threads were removed on the seventh day.

[This operation is often attended with serious accidents, and even loss of life. Of sixty-four cases, four died, and several had suppuration of the abdominal walls. It can only be considered justifiable, when palliative treatment has failed, or the hernia is so great as to interfere seriously with the patient's avocations, comfort, or health. (A practical Treatise on Abdominal Hernia, by Thomas Pridgin Teale, F.L.S., Fellow of the Royal College of Surgeons, and Surgeon to the Leeds General Infirmary, &c. A most complete and able work, which ought to be in the library of every surgeon in the kingdom.)] *Teale on Hernia, p. 74.*

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146.—TREATMENT OF STRANGULATED HERNIA.—EXAMINATION AND TREATMENT OF THE PROTRUDED INTESTINE.—By T. P. Teale, Esq., F.L.S., &c.

[Mr. Teale, after having described the various modes of operating in strangulated hernia, and the different instruments devised for that purpose (gives some excellent wood cuts, to illustrate the different kinds of instruments used in hernia, and among the rest a "concealed bistoury, used by Mr. Turner," which is no doubt an admirable knife for many cases. It is due to Mr. Trant, of Dublin, however, to state, that a bistoury of very similar, if not of superior kind, has long been used by him, and is made by Read & Co., 4, Parliament-street. A description of this instrument will be found in the Dublin Medical Press for May 13, 1846, p. 303). He goes on to speak of the treatment of the protruded intestine, when hyperhematic; and says, "there are no degrees of discoloration of the intestine, short of

its vitality being extinct, which forbid the replacement of the part within the abdomen." In inflammation, the intestine exhibits various shades of red colour, more or less florid, and the vessels are seen to have an arborescent arrangement. When congested, the small vessels may easily be seen of a dark colour, or they may be concealed by infiltration of blood beneath the peritoneum. The surgeon has to determine whether the intestine be still living or not. Mr. Teale observes :]

This question he endeavors to determine in the following manner. He waits for a few moments after the parts are liberated from stricture, and observes whether the discoloration becomes less intense ; or he presses the blood out of the distended veins, and sees whether they become rapidly refilled. If no evidence of the circulation existing is thus obtained, the intestine may be covered with the integuments, or with a warm moist sponge ; and after the lapse of a little time, when it is again examined, perhaps a slight diminution of the intensity of the discoloration may be detected. Should these means fail, the surface of the intestine may be slightly scarified by the point of a lancet, when a slight oozing of blood will perhaps be observed.

It is scarcely necessary to allude to the extreme care and delicacy which are requisite in making this experiment. If, from any of these expedients, evidence can be obtained that the vessels of the intestine, throughout the whole extent of the protruded portion, are still capable of transmitting blood, however deep the degree of discoloration may be, such portion of intestine may be returned within the abdomen. Sir. B. Brodie, having failed to obtain proof of vitality from the usual modes of observation, scarified the surface of the intestine, and, having observed blood flow from the divided vessels, replaced it. The result of the case was fortunate. Before returning the intestine, it must be subjected to gentle pressure, in order that it may be emptied of its contents ; and, when the bulk of the protrusion has thus been diminished, the intestine may be carefully pushed in successive portions into the abdomen, until the whole of it is replaced. The surgeon should afterwards pass his finger fairly within the abdomen, to determine that no portion of intestine is engaged within the sac, as well as to determine that, in returning the protruded knuckle of intestine, it had not been invaginated within a neighbouring portion of the intestinal canal.

2. *Treatment of the Intestine when gangrenous.*—When the intestine exhibits the deeper shades of discoloration, and no evidence can be obtained that its blood-vessels are still capable of transmitting blood, although the unequivocal marks of gangrene be not established, it must be treated as if it were undoubtedly gangrenous. When gangrene is fully established, the dead portions of intestine present considerable diversity in their colour. If the gangrene have resulted from simple congestion or from mechanical obstruction of the vessels, the part exhibits an uniform purple or black colour ; its lustre is diminished, its serous membrane may easily be detached, and its coats are soft and lacerable. When the gangrene has resulted more immediately from inflammation than from a mechanical arrest of the circulation, it is usually limited to distinct spots or patches, which are of an ash-grey or greenish tint, devoid of lustre, soft, and lacerable. The gangrenous parts may be found more or less completely detached by ulceration, and the bowel perforated.

When the gangrene is general, or even extensive, an incision must be made through the whole length of the gangrenous portion of intestine, which must be left in the sac to be detached by the sloughing process. The opening thus made generally allows of the free evacuation of the contents of the upper portion of the alimentary canal, without division of the stricture. If, however, the stricture should still afford a material obstacle to the discharge of the intestinal contents, a director must be passed beneath it, and its division effected with as little disturbance as possible of the neighbouring adhesions. The wound must afterwards be left open, to facilitate the free

discharge of matters, and simply dressed with wet linen frequently renewed. Louis maintained that the division of the stricture was not necessary for the evacuation of the intestinal canal, after a free incision had been made into the gangrenous portion of intestine; and Mr. Travers has strongly objected to the division of the stricture under these circumstances, on the ground of its disturbing the adhesions, and being unnecessary for the evacuation of the bowel; nevertheless, he admits that this rule of treatment may have exceptions. "If," says Mr. Travers, "the stricture should still be sufficient to retain the matters, which will seldom be the case, a moderate dilatation of it will be required." Mr. Lawrence, coinciding with Mr. Travers in opinion that the division of the stricture is generally unnecessary, states, that if the stricture be so narrow as to interfere with the discharge, an incision must be made to afford the requisite room. To ascertain this point, as well as to discover whether there be any interior constriction, Mr. Lawrence recommends that the end of the little finger, or a female catheter, be cautiously introduced into the bowel. Arnaud and Dupuytren divided the stricture when the fæces did not freely escape. The general practice of Sir A. Cooper was to divide the stricture. Mr. Key is of opinion that the danger of disturbing the adhesions has been exaggerated, and states that a director may be passed between the intestine and the stricture without materially disturbing the adhesions.

[Brasdor's practice of excising the gangrenous parts, and attempting to unite the divided extremities of the intestine by suture, is now universally abandoned. It was formerly the practice to retain the gangrenous intestine by a ligature through the mesentery, to prevent the divided portion of intestine being retracted within the abdomen, and the consequent effusion of fæces into the peritoneum. Desault, Scarpa, and Travers have strongly expressed their opinions in opposition to this practice. "Not only," says Mr. Teale, "is the ligature unnecessary, but it is shown by Scarpa to be also injurious, by counteracting, to a certain extent, the subsequent process of spontaneous cure. In speaking of the treatment of the intestine when adherent, Mr. Teale observes:]

Recent adhesions of the intestine to the sac or omentum may be destroyed by the finger, or handle of the scalpel, provided the intestine be not in a gangrenous state; in which case it must be treated in the manner already described. If the two sides of a coil of intestine are united to each other by a layer of plastic matter, this adhesion ought in the same way to be destroyed; as, from the neglect of this precaution, the intestine has been held in such an angular form after its return into the abdomen, as to occasion obstruction to the passage of the fæces, speedily followed by death. Recent adhesions of the intestine to the mouth of the sac are generally destroyed by the act of drawing down the intestine after the stricture has been divided, or during the replacement of the protruded viscus. After the intestine is returned, the finger should be passed through the ring into the abdomen, to ascertain that no part of the late protrusion is injuriously confined by plastic matter.

Old organised adhesions uniting the intestine to the body of the sac, when of moderate extent, must be cautiously divided by the knife, unless they unite the parts closely to each other; in which case portions of the sac must be dissected out, and returned with the intestine. When the adhesions are of great extent, and cannot be overcome without tedious or dangerous dissection, their division is improper. The stricture should be divided, and the intestine allowed to remain in the sac.—*Teale on Hernia, p.* 128.

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147.—ON THE OPERATION FOR STRANGULATED HERNIA, WITHOUT OPENING THE SAC.—By J. F. South, Esq.

[In Mr. South's translation of Chelius' "System of Surgery," we find some good remarks on this operation. The operation of opening the sac

was performed so long ago as 1718, by Petit. Monro and Cooper also practised it in large herniæ, but it is Mr. Key who has raised it in the estimation of practitioners of our own day; he recommends it principally on account of the mischief arising from the exposure of the inflamed bowel to the air and light, and to handling. South believes, with Lawrence, that peritonitis often results from pressure upon the neck of the sac, by the stricture being kept up for hours and even days; yet an additional cause, he says, "is to be found in the unwarrantable violent and repeated squeezing which the rupture suffers during the use of the taxis." The great objection to this operation is the possible gangrenous condition of the intestine or omentum, and the question arises, can this condition be detected? Mr. Key believes it may; South is of a different opinion. He says:

I cannot agree with Key, "that the ordinary characters of a completely sphacelated portion of bowel are distinct enough," for I am quite sure I have seen them all existing more than once or twice without any gangrene, but simply depending upon the unwarrantable violence used in attempting to return the rupture. But I do agree with him, that "it sometimes happens that no such change takes place in the swelling, and then the evidence of gangrene is much more equivocal." It is by no means unfrequent to find an intestine mortified, although the time it has been strangulated is short, and not the slightest external sign leads to the presumption of its condition; as, on the contrary, it now and then happens that the exterior of the swelling is tender, inflamed, doughy, and crackling, from the causes I have just mentioned, and yet the intestine within be healthy, and the patient recover the operation. As regards the loss of elasticity in the swelling, I believe it a very uncertain sign; the intestine may be grangrenous, but the sac full of fluid, as is commonly the case under such circumstances, and then the elasticity remains. The only sign which I think can be relied upon, though even that is doubtful, is when the intestine has burst; then, indeed, although the redness, doughness, and crackling still remain, the rounding of the swelling subsides, and when a little pressure is made on it a central hollow is produced, and a sense of yielding beneath, very different from the pitting caused by pressure on œdematous cellular tissue.

From my own personal experience of the division of the stricture external to the sac, I can say nothing, never having performed it. But I do not think so great advantage is gained by not opening the sac as is stated. From all the cases I have observed, either in the practice of others or in my own, I do not think cutting through the hernial sac, and consequently opening the peritoneal cavity, so serious as generally considered. If inflammation of the peritoneum have not been previously set up, either by the rough usage of the rupture, or by the irritation which a long strangulated or gangrenous gut produces, I cannot understand why making a small opening into the peritoneal cavity should be more dreaded than the long slits, which are now made without compunction, for the removal of diseased ovaria, and so forth. There are, however, some conditions which even those who advise leaving the sac untouched, admit, require that it should be opened, namely, confinement of the protruded parts by entangling bands, or by adhesion to the sac itself, and a gangrenous state of the bowel. Under all circumstanses, therefore, I am still disposed to continue the practice of opening the sac, as I have hitherto done, believing it to be the most safe. I cannot conclude these observations without stating that, I believe much of the fatality of operations for strangulated ruptures depends upon the improper after-treatment. I well recollect the time when, as soon as the patient was put to bed, he was dosed with senna and salts, with the view of speedily procuring stools, and, his already irritable bowels being thereby rendered still more irritable, he speedily sank. Although this practice is probably less followed now than formerly, yet I am afraid there is still too great inclination to employ purgatives too early. For a few hours nothing more than a clyster should be given, and not even that, unless the patient be very

uneasy in his bowels, and puffed up with wind. Not unfrequently they relieve themselves, and only after twelve or eighteen hours is it advisable to give medicine by the mouth, for the purpose of completely clearing the whole intestinal canal. And unless there be any special indication for calomel, I believe the castor oil is the best remedy of all.

*Medico-Chirurgical Review, April, 1846, p. 50.*

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148.—A CASE OF STRANGULATED HERNIA.—By B. PHILLIPS, Esq., F.R.S., Assistant-Surgeon to the Westminster Hospital.

[This case was remarkable inasmuch as it occurred 12 months after operation. The patient was 73 years of age, and had been operated on by Sir B. Brodie, when her recovery was slow but complete. Finding that the medicines she was accustomed to take did not have their proper effect, she removed her truss and found a tumour, the contents of which she could press back with a gurgling noise. Urgent symptoms came on, and Sir Benjamin Brodie was called in consultation; he thought there was no strangulation at the seat of the former stricture, but that obstruction existed elsewhere. She soon sank and died.]

On the following afternoon the body was examined; the abdominal cavity was laid open by a central longitudinal incision; from this another was carried in an oblique direction so as to lay open the intestine contained in the sac. We found that although the opening through which the intestine passed was large, it was still small enough to cause a strangulation of the gut, which was of a dark chocolate colour. From that point the intestine was followed until we arrived at the left lumbar region without the discovery of any obstruction. I then observed that the tube had passed far beyond that point, and that it was not probable that there was any obstruction further down; however, the search was continued, and we discovered that the uterus and the rectum were consolidated into a dense fibrous mass, a small cavity existing in each; that of the rectum being barely sufficient to admit a small bougie. Several curious circumstances are presented in this very interesting case. The almost simultaneous occurrence of a strangulated hernia, and of intestinal obstruction from another cause. The ready passage of an elastic gum stomach-tube through an obstruction which did not admit of the paasage of any fæcal matter, even when acted upon by enemeta.

The probability was very strong that the intestine would not be strangulated a second time at a point which had been so much enlarged by previous operation: the probability became almost a certainty when the tumour was so readily returned; and yet, although little more than twenty-four hours elapsed between the gurgling reduction of the gut and the death of the patient—the powers of life being naturally feeble, yet the intestine had acquired a dark chocolate colour, and had become strangulated at the old crural ring. Then with respect to the other obstruction the obscurity is not less:—it existed at a time when the gut very readily passed back through a large opening: it was fair to assume that the obstruction was not there unless indeed the gut had been nipped or unduly pressed upon by the truss, and had thus undergone contraction—but then the distended transverse colon-rendered that view of the case improbable, and made the assumption probable that the obstruction was nearer the rectum than the part contained in the hernial sac: but opposed to that assumption was the fact that twelve inches of stomach pump tube was passed along the intestine with comparative ease; and supposing the rectum disease to be one on which the original obstruction depended; how came it that if it admitted a tube of the size of the little finger, it would not allow fluid fœcal matter to pass? for it is the fact that there was no impaction of solid fœcal matter at any portion of the intestinal tube.

Two suggestions here occur: the hernial tumour was very inefficiently maintained by the truss; it was so constantly down that it might have constituted an obstacle, or it might be that the very flexible tube first introduced did not pass through the rectal obstruction at all, but became coiled up in the very extensible rectum of an old woman with very relaxed fibre; for, as I have already stated, the more unyielding new tube could not be passed beyond four inches. Whatever explanation may be adopted, I think it must be admitted, that whether the rectal disease constituted the original obstruction or not, it is certain that, at a later period, another was constituted by the strangulated intestine. The case altogether deserves to be recorded among the curious cases which the practice of the surgeon not unfrequently affords. *Med. Gaz., April*, 10, 1846, *p.* 635.

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149.—ENTEROTOMY OF THE SMALL INTESTINE.

M. Maisonneuve has adopted a mode of practice which, I am convinced, is calculated to save the lives of many subjects of strangulated hernia, who would otherwise perish. It frequently happens after the operation for hernia, that the strangulated portion of intestine, when released from stricture and replaced within the abdomen, is incapable of resuming its functions; symptoms of obstruction continue, and the intestine above the part strangulated remains in a state of tympanitic distension. M. Maisonneuve, having operated upon a patient for strangulation of the small intestine, found, five or six hours after the operation, that the obstruction was unrelieved. He separated the agglutinated edges of the incision, and, passing his finger into the abdomen, felt a distended coil of small intestine, adherent by false membrane to the surrounding parts. Without materially disturbing the adhesions, he seized the distended coil of intestine with the forceps, and by means of probe-pointed scissors established an opening in it, through which the intestinal contents were freely discharged. The urgent symptoms were relieved, and the patient recovered.

*Prov. Med. Transactions, Vol.* 2, *N. S., p.* 117.

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150.—CASE OF OBSTRUCTION OF THE LARGE INTESTINE, IN WHICH THE ASCENDING COLON WAS OPENED WITH SUCCESS.—By Samuel Evans, Esq., Derby.

[The patient was a robust farmer, twenty-three years of age; the date of his illness was in September, 1843, when he ate a quantity of sloes, by which a severe attack of colic was produced. The disease yielded to active treatment, but returned the following January, and this attack was succeeded by fœtid watery stools mixed with scybala. Mr. Evans saw him on the 5th of February, when the abdomen was greatly distended, and he was suffering from severe pain, which recurred at intervals of five or ten minutes. It was most severe in the right iliac fossa, and here the distension was most marked; the pulse seventy-six, and soft. He was ordered a sedative dose of Battley's solution, to be followed by a pill, containing a drop of castor oil every three hours, and a colocynth enema every four hours. The opiate gave him temporary relief, but in a few hours the pain became worse, and vomiting of mucous and bilious matter took place. The croton oil, appearing to increase the pain and sickness, was discontinued, and opium with calomel was given freely, and soap and water injections were used every three hours. The opiate soon relieved the pain, but there was no evacuation from the bowels; he continued in this state till the 12th, when stercoraceous vomiting commenced, and the pain returned in a most severe form. A large dose of liq. opii sed. was given, which alleviated the *pain, and a rectum* bougie was introduced, but without bringing away any

fæcal matter. Next day, however, after the administration of an enema of soap and water, a large quantity of flatus escaped, and a little fæcal matter, which considerably diminished the abdominal distension.]

From this time to the beginning of April, the size of the belly gradually increased: he also daily suffered many paroxysms of pain; and although at intervals of one, two, or three days, large quantities of flatus, and a few very small portions of clay-coloured fæces escaped, it was quite obvious that there still existed a partial obstruction in the bowels, since the distension of the abdomen, and the swelling in the right iliac region, had considerably increased. During this protracted illness he was seen by Dr. Bent, of Derby, and several of my medical friends, by whom various remedies were proposed, but he obtained relief *only*, from the administration of narcotics. The patient had become much emaciated, was extremely weak, and his general health greatly impaired; the vomiting recurred almost daily, and the stomach could retain only the smallest quantities of food; the lower extremities were much swollen, the tongue and skin dry, the pulse frequent and small.

[On the 25th of March, Mr. Evans proposed to make an artificial anus, by Callisen's method, as modified by Amussat. By the desire of his friends, however, it was postponed.]

April 8th.—He has become very much emaciated; the abdomen is distended to the greatest possible degree; the convolutions of the small intestines, which appear to be greatly enlarged, can be clearly traced through the attenuated coverings, and their vermicular motions distinctly observed. The swelling in the right iliac region had so much increased as to present the appearance of great deformity. The integuments in this region are extremely thin, and of a vivid colour: there is considerable œdema of both legs; tongue dry and fissured; the mucous membrane of the tongue and of the mouth is covered with an aphthous eruption, he has not retained the smallest quantity of food, and has frequently, since the 4th inst., vomited dark, watery, bilious matter; there has not been the slightest appearance of fæcal evacuation for four days; pulse feeble and fluttering, varying from 112 to 124: respiration 16: urine scanty and turbid, of a dark olive colour, and fœtid.

[The patient's friends were now most anxious the operation should be performed, which was immediately executed by Mr. Evans, as follows:]

The patient having been laid on the bed with his face downwards, two pillows were placed under the belly for the purpose of rendering the right loin more prominent. I made an incision of four inches across the loin, commencing it at the outer margin of the sacro-lumbalis muscle, about an inch above the crest of the ilium, and extending it forwards in a direction parallel to the crest. Having divided the latissimus dorsi, and the outer margin of the quadratus lumborum muscles, I proceeded to expose the bowel by opening the fascia; but in doing so, I also opened the intestine, which was intimately united with the fascia, by dense cellular tissue, without any intervening fat: indeed, no fat whatever was brought into view, as I had been led to expect there would be—a fact that may be accounted for by supposing the extreme distension of the head and ascending portion of the colon, to have pressed upwards the kidney with its circumjacent fat, above the line of incision. Possibly, however, this fat may have been absorbed, as the man was extremely emaciated. The instant the bowel was punctured, a profuse quantity of semi-fluid, clay-coloured fæces was projected with great force through the opening, and continued to escape for a considerable time, so as to amount altogether to more than two gallons. I then enlarged the orifice in the intestine to the extent of one inch in a transverse direction, or parallel to the external incision. The last steps of the operation consisted in connecting the edges of the incision in the intestines, with those of the outer or anterior half of the external wound, by means of five sutures, the inner third of the external wound being closed by a pin,

and twisted suture, and covered by a few strips of adhesive plaster. A small piece of oiled lint was then placed between the edges of the wound in the intestine, and cloths wetted with warm water were laid over the wound. The abdomen, now reduced to its natural size, was supported by a many-tailed bandage, and the patient was placed on his right side in bed, so as to allow of a free escape of the contents of the bowel through the wound. Nine p.m.—He has had no return of vomiting, the sense of distention had ceased, and he feels in every respect greatly relieved; he complains of a smarting pain in the wound, which extends to the right iliac region; pulse soft, regular, 110. Ordered forty drops of liq. opii sedativus.

[On the 12th of April, he is reported as labouring under a sinking sensation at the epigastrium; he was ordered mutton chops, wine, and milk daily, with tonic medicines. On the 18th, improvement is gradual but progressive: the bowels act regularly through the artificial anus, and the wound is granulating. Water was injected into the rectum through a long tube, and numerous particles of fæcal matter came along with it.]

May 6th.—The evacuations escape entirely by the artificial anus, from which the plug is removed four or five times a-day, for that purpose. Injections of warm water per anus return, mixed up with mucus only.

June 28th.—Seven quarts of pale straw-coloured urine, having all the sensible properties of saccharine urine, and of sp. gr. 1040, have been passed during the twenty-four hours: thirst abated, pulse 100. The patient declares that the thirst, diuresis, &c., had not existed more than a week, and this assertion is fully confirmed by his mother, whose anxious watchfulness render her quite alive to the slightest variation in the symptoms. According to her statement, the urine had seldom exceeded three or four pints daily, and was of the colour of pale amber.

℞. Acidi nitrici diluti ℥iss.; tinct. opii ℥iss.; decocti cinchonæ ℥viii. m. ft. Mistura sumat ℥i. ter quotidie. Rep. pil. opii et kino mane nocteque. Diet—bread, beef, and mutton; and to drink beef-tea and toast-water. To avoid sweet, acid, and spirituous drinks; also vegetables and fruits.

[On the 4th of July, it was evident he was sinking fast, and he died the following morning at eight o'clock. The body was examined twenty-three hours after death.]

The artificial anus was a small constricted circular aperture, about five-eighths of an inch in diameter; its margin was firm and unyielding; the integuments near the orifice were slightly drawn inwards, and their connection with the coats of the intestine were so intimate, that the line of union of the tissues could not be defined. The abdomen contained six ounces of serum, of a dirty yellow colour. The stomach and small intestines were greatly distended with flatus; the peritoneal surface of the lower two-thirds of the ilium was highly vascular, and of a florid red colour. The mucous membrane of the stomach and small intestines appeared healthy; the latter contained a small quantity of pale yellow chymous matter. The cœcum was enormously distended, and was nearly as large as a stomach of ordinary size; the ascending colon was also much enlarged. About a quarter of an inch from the commencement of the transverse colon, that is, just beyond the angle formed by the junction of the ascending and transverse portions of the colon, the gut was contracted to about three-quarters of an inch in diameter, and about the same in length; the contracted portion presented a cartilaginous hardness. The serous covering of the cœcum, ascending colon, and the first half of the transverse colon, was highly vascular; there were numerous small patches on its surface, of a deep red colour, which were partially covered with recently-effused lymph.

The anterior three-fifths of the circumference of the first half of the ascending colon were bounded by peritoneum, and the posterior two-fifths by the fascia covering the lumbar muscles; and it was in the latter part of the

bowel, about half an inch beyond the cœcum, that the artificial anus was formed. About two ounces of dark brown fæcal matter were found in the cœcum and ascending colon; the mucous membrane was of a deep claret colour, and thickly covered with bloody mucus. The contracted portion of the colon was almost as hard as cartilage; it formed a ring about three lines thick, and nine lines broad, and appeared to consist of compact white fibres, arranged irregularly around the intestine; between the mucous and muscular coats the stricture would just admit a crow-quill; its inner surface was in a state of ulceration, and presented an irregular granulated appearance without any traces of mucous membrane. The mucous membrane of the first third of the transverse colon was in a state of uniform injection; the whole extent of the transverse colon was lined with a muco-purulent secretion of a greenish colour, which was most abundant near the stricture. The descending and sigmoid portions of the colon were quite empty and contracted, and presented no morbid appearance. Both kidneys were larger than natural, their structure was not altered, but the cortical substance was rather pale than natural. Liver, spleen, and pancreas, healthy. Thorax.—The pericardium was adherent to the heart in its whole extent. The heart was considerably enlarged.

[Mr. Evans remarks that this is the eleventh case on record in which this operation has been performed in consequence of intestinal obstruction. In this case it was the only method that could afford relief, but it was deferred until the patient was very much exhausted by the sufferings he had to endure, and the case was very unfavourable for the operation. The large quantity of fæcal matter which escaped through the artificial anus, shows to what a degree of distension the cœcum is capable. We ought to bear in mind, that although circumstances were unfavourable for the performance of this operation, that the patient steadily recovered, and that it was another disease from which he died. The operation itself was in every respect successful.] *Medico-Chirurgical Transactions, Vol.* 28, *p.* 95.

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151.—REMOVAL OF SEVENTEEN INCHES OF THE INTESTINE.—By A. Brigham, M.D., Utica, New-York.

[Dr. Brigham reported a case (See Retrospect XII., p. 201,) in the American Journal of Medical Science, in which 17 inches of the intestine were removed, from which the patient recovered, but in a year afterwards she sunk, and died of mental disease, no symptom having a relation to the removal of the intestine being manifest. On examination of the bowels after death, Dr. Brigham remarks that:]

The portion of the intestine removed at the time of the injury was found to be the colon: it having been divided about four inches from the entrance of the small intestine. The divided portions were drawn together at the place of injury and united by organized lymph, which also connected the intestines to the parietes of the abdomen where the wound was made. The passage between the divided ends of the intestine was small and crossed by a few ligamentous-like bands—but still large enough to permit the passage of semi-liquid fæces. Judging from the size of the intestine removed, which was diminished by being drawn out at a small opening, we had erroneously supposed, without particular examination, that it was a portion of the small intestine, and so stated in our former communication.

*American Journal of Med. Science, Jan.*, 1846, *p.* 44.

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152.—TREATMENT OF INTERNAL BLEEDING HÆMORRHOIDS.—By Dr. Watson.—(New-York Journal of Medicine, July, 1844.)

In an interesting paper on hæmorrhoids and prolapsus ani, Dr. Watson

states that for the bleeding internal piles, he has found injections of acetate of lead the most valuable remedy. He recommends to employ this remedy of the strength of one drachm of acetate to eight ounces of rain or distilled water, and to repeat the injection after every alvine dejection, as it is then chiefly that the hæmorrhage occurs. Two ounces of the solution he regards as sufficient for one injection. An occasional blue pill he finds useful, followed by a dose of castor-oil, with extract of taraxacum. For obviating the obstinately costive habit which usually attends hæmorrhoids, Dr. Watson recommends as the best, two to three drachms of the following confection at bed-time: common rosin, well pulverized, one ounce, clarified honey, five ounces. Half an ounce of balsam of copaiva renders this confection still more efficacious, but it is then apt to disagree with delicate stomachs. This medicine produces early next morning a soft consistent motion without griping, tenesmus, or any other disagreeable sensation.

*Edinburgh Med. and Sur. Jour.*, Jan., 1846, *p.* 238.

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153.—ON INTERNAL PILES, WITH PROLAPSUS AND HÆMORRHAGE, CURED BY TYING THE BLEEDING PILE, AND REMOVING THE HÆMORRHOIDAL EXCRESCENCE.—By Mr. HAMILTON.

In many cases of internal piles, when the patient goes to stool, a number of small tumours protrude through the anus. They are usually of a deep purple or violet colour, resembling purple grapes or damsons, but sometimes much larger, equalling a chestnut or small egg in size. At first, when small, they either go up of themselves or are easily reduced: but they soon become larger; for when they get through the anus, the contraction of the sphincter strangulates them and causes them to be much distended with blood; by degrees, also, they drag down more of the mucous membrane of the rectum. As they increase in bulk they are harder to reduce; and as they continue long out, the contraction of the sphincter becomes exhausted, the muscle relaxes, and offers less resistance to the protrusion, so that a portion of the bowel with the internal piles comes down, not only during the efforts at stool, but when the patient walks or rides, particularly in hot weather. The complaint then becomes truly distressing. One or more of the piles become inflamed, the blood coagulates in them and is absorbed, and lymph poured out, which becoming highly organised and full of vessels, forms what has been called the vascular tumour. At length the projecting tumours in the rectum are irritated and abraded by the psssage of hard fæces, and ulceration of their summits takes place, with free hæmorrhage from their highly vascular structure. This is particularly apt to occur during the efforts in passing a motion, when the open pile, strangulated by the pressure of the sphincter, and distended to the utmost, sometimes actually spits out blood, and in those cases you will see the sides of the night-chair dashed with blood of a florid colour, which also trickles down the patient's thighs and legs. Even after the piles and prolapsed bowel are returned, the hæmorrhage at times goes on within the gut. I recollect the case of a shoemaker who had very free bleeding during each motion, but the first part of the motion was a large clot of black blood, the result of the hæmorrhage into the rectum after the previous motion. Besides the irritation, the pain, the serous discharge which always takes place when the prolapsus is large, the loss of time in the reduction, these constant daily bleedings, often to the extent of six or eight ounces of blood, finally exert a most injurious effect on the constitution. The patient's complexion is of a pale, watery-looking, yellow colour; the sclerotic of a pearly white. He loses all energy; he suffers from the vascular reaction attending large losses of blood, viz., palpitation of the heart, violent headache, with noise in the *ears*; and, at last, from the deteriorated state of the blood, deprived of its *more solid* particles, anasarca supervenes.

[Mr. Hamilton considers internal piles of long standing to be of three kinds:]

1st. The most numerous are true varicose enlargements of the hæmorrhoidal veins, the soft purple piles covered by smooth mucous membrane. 2d. A varicose vein covered by mucous membrane, altered by inflammation, thickened and highly vascular, so as to bleed readily from the whole surface, which is red and rough. 3d. A firm red pile of rather a pale colour, composed of highly organised coagulated lymph, permeated by numerous vessels sometimes of large size, and which, when the mucous membrane is abraded, and they are opened, bleed very freely. This is the vascular tumour, and is often the seat of the chief hæmorrhage. I believe this to be formed originally by one of the varices becoming inflamed, and the blood in it, as a necessary consequence of the inflammation coagulating. As the coagulum is absorbed, the irritation of the pile being kept up, lymph is poured out in its place, and becomes organised and permeated with vessels, with which it is abundantly supplied from the highly vascular neighbouring structures. The very shape and situation proves the vascular tumour to have been originally the same as the varices which surround it.

Now, with regard to the treatment. When the case is recent, the prolapsed piles not large, the bleeding small, and the constitution not affected, you are not called on to operate, as you can generally do a great deal by other means. Regulate the bowels by mild purgatives, a few grains of blue pill and rhubarb at night, and a little of the infusion of roses and Epsom salts in the morning for a few days, after which, give the ordinary electuary of confection of senna, sulphur, cream of tartar, and mel rosæ, or, what is better, treacle, as the mel rosæ gripes some people. If, besides the pile coming down, there is bleeding, let the patient, after breakfast, throw up a pint of cold water with a drachm of nitre dissolved in it; this you will find very useful. Enjoin steady exercise, and moderation in diet. In thin, delicate subjects, in whom the disease is sufficiently common, tonics, particularly the mistura ferri aromatica, are of service. Should there be any serious organic disease, particularly of the chest, you should interfere as little as possible with the piles.

When the pain and irritation from the pile, as well as the hæmorrhage, are beginning to weaken the patient, effectual means must be adopted. Mr. Hamilton on this subject remarks:]

Of these, the chief are the actual cautery, which is now seldom resorted to; the nitric acid, cutting off the hæmorrhoidal tumours, or tying them. In a very bad constitution, where you would not like to try either the knife or ligature, you may occasionally resort to the application of the actual cautery to the bleeding pile. It is much less painful than you would think.

With respect to the nitric acid, I have no confidence in it in cases where the prolapsus is large, as I have seen it applied in such cases with scarcely a brief temporary effect. Where there is a single bleeding vascular tumour, it will be found a safe and often efficacious remedy. As to cutting off internal piles either with the knife or ligature, there appears to be a common consent among the best surgeons in this country against it. Sir Astley Cooper mentions four fatal cases—three from hæmorrhage. This is the danger: after the piles are cut off, and the bowel reduced, the patient begins to experience a sense of heat in the rectum ascending up the abdomen, with some pain, and a desire to go to stool. There is a sinking, anxious feeling. If he goes to the night-chair, he will probably pass a quart of blood, more or less clotted. This will be repeated several times—fainting and death will soon follow. Dupuytren, who was an advocate for excision, used to have an assistant stop with the patient after the operation, to watch the approach of the symptoms of internal bleeding. When these symptoms manifested themselves, the patient was desired to pass a motion. The blood came away, and the bowel was protruded, and the bleeding points were touched with the actual cautery. This stopped the bleeding, but was generally fol-

lowed by much local irritation, retention of urine, sloughing, and sometimes contracted anus. You will, therefore, not try excision, except of the external piles or hæmorrhoidal excrescences.

The operation which I should recommend, and which you saw me perform in the two cases just discharged, is tying one or more of the piles. In Levassey, when the bleeding came from a single one, and when the prolapsus was not large, I only tied the bleeding pile and cut off the hæmorrhoidal excrescences. In Grogan, where there were many large piles protruded, and the bleeding more general, three were tied. Previous to the operation, as in those cases, you will give a purge the day before, because it is well to let the rectum rest for a couple of days after the operation. It would be wrong not to inform you that this operation, simple as it appears, has caused death. In one case tetanus followed; in another, gangrene of the rectum was the cause of the fatal result. Such consequences are, however, rare indeed; and out of a very large number of cases which I have experienced, I never saw any serious symptoms ensue. Pain sometimes follows the operation.

In true prolapsus, all the coats of the rectum come down; it is a protrusion of the upper part of the bowel through the lower, and out through the sphincter—a sort of invagination by the dependent position of the prolapsed bowel, which may be from one to several inches long. From the pressure of the sphincter it becomes very much swollen, and the reduction proportionally difficult. Inflammation finally commences, and if the part has been down beyond a certain time, ulceration begins round its base, or gangrene of a portion of it ensues. You are generally sent for before this, and you find a mass of intestine protruded from the anus, of an intense red or slightly livid red colour, very hot and throbbing, and the surrounding parts wet with serous discharge. The patient will be in much pain and distress. Letting him remain on his side after having oiled the fingers of your right hand, you press gradually and firmly on the prolapsus, so as to diminish its bulk, and to press it within the anus. But you must not be content with this; for in the majority of instances, directly you withdraw your fingers the prolapsus re-appears. The great thing is to push it beyond the internal sphincter, the contraction of which will most likely keep it up. To do this, you must push up the prolapsus within the anus as high as one, or in cases of old habitual prolapsus, two fingers will go, taking care that the whole is up; for one small fold on either side will be sufficient to drag it down again. Where the prolapsus has been long down, even pushing it above the internal sphincter will not succeed. The hard tumour of the prolapsus acts as a foreign body, as it were, and stimulates the rectum to its expulsion. What you must do will be best shown by the following case:

About a month ago I was asked to go and see an old man in the Liberties, whom I was told had been given up by his medical attendant, which I found, on waiting on that gentleman to be true. I certainly found the old man very ill, in great torture, with a feeble intermittent fever, and dry brown tongue, a large, hard prolapsus, which had been down several days, and which was extensively ulcerated; he also had retention of urine. Attempts had been made to reduce the prolapsus, but they had failed; no sooner was it put up than it protruded again immediately. I first drew off the water. I then touched the ulcerated portions of the prolapsed rectum with solid nitrate of silver. This gave pain, but I knew it would be likely to prevent after mischief. I then, after having oiled my fingers, reduced the prolapsus as I have described to you, beyond the internal sphincter; but directly I withdrew my fingers, the prolapsus was protruded—this happened a second time. I, therefore, got a moderate-sized tallow candle, cut it in half, rounded the end, and after having reduced the prolapsus, before it came down I introduced the candle, and desired the man to keep it in for a couple of hours. It effectually prevented the bowel coming down, and he recovered.

A conical instrument, such as this small glass speculum recti, would answer for the same purpose.

Dupuytren, where a prolapsus had been long down, and was difficult of reduction, placed the patient on his face, with some pillows under the pelvis and belly, so as to make the anus the highest part of the body. After having surrounded the tumour with moist linen, and placed a compress on the centre of the external extremity, gentle pressure was used at the base, so as to diminish its volume, and with the finger it was gradually pushed inside, the last part protruded being the first reduced.

It is clear that, after having reduced a prolapsus, you have merely temporarily relieved the complaint. In young children, I suppose from the long continued straining at stool, with a relaxed mucous membrane and a weak sphincter, the disease is common enough, and very obstinate. It generally gets well, and only demands any treatment necessary to remove the existing causes of constipated bowels or diarrhœa, ascarides in the rectum, &c. In adults, the disease is a very serious inconvenience. The bowel coming down more or less each time the patient goes to stool, and requires a long time to put it up again, the time so spent being often so considerable, that the patient very often accustoms himself to go to stool in the evening, that he may have plenty of time to reduce his prolapsus. You are, therefore, called upon to afford, if possible permanent relief. This may be attained either by Hey's operation of cutting off a fold of skin at the margin of the anus so as to include in the piece removed a small portion of the mucous membrane; or by Dupuytren's, which is merely a modification of Hey's, being the same in principle, viz., to remove with a sharp scissors some of the folds which radiate round the anus, taking care that the incision should extend a short way within the anus. The same operation I have already advised for internal piles with prolapsus, may also be used in the true prolapsus of all the coats of the bowel, namely, tying a few small folds of the membrane just within the anus. But in old men, in whom the true prolapsus most frequently occurs, and in broken-down constitutions where there is organic mischief elsewhere, all you can do is to palliate. Should the gut come down when the patient walks, you can use an anal truss, the ivory knob of which goes a short distance up the anus, and prevents the protrusion; or a pyriform pessary of boxwood may be passed up the anus, and kept up by proper T bandage. *Dublin Hospital Gaz., Dec.* 15, 1845, *p.* 131.

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### 154.—FISTULA IN ANO.

[In Retrospect, Part XI., Art. 81, we gave some account of the several methods of applying ligatures in the treatment of fistula in ano. It seems that this method under some circumstances has been adopted for many years in Ireland, by Dr. Colvan, of Armagh. He says:]

The first case was that of a small farmer, who could not confine himself to bed for the necessary period if operated on by the knife. The fistula was complete, and situated about one inch, or rather more, from the verge of the anus. What I used was a catheter wire about as thick as a piece of small twine; this I twisted pretty tight at first, increasing the degree of tightness on the included part every three or four days, for which purpose he had to walk two or three miles from the country. He felt no great inconvenience from it until just before it had cut through the last remnant of the included part, he then got a little feverish, and the part somewhat painful and swollen, but by one or two days' confinement and rest, and the application of a little stupe and poultice, he got quite well, and has remained so since. The second case was that of a stone-cutter who could not confine himself, and who had also a considerable abhorrence of being cut. I operated on him the same way by passing the wire through the external portion of the fistula

into the rectum until it was felt on a finger placed there, by which it was conducted out through the anus, and twisted to the proper degree of tightness. He felt the same inconvenience and feverish attack when the wire was just cutting through, but it was merely for a day or so, and he got quite well, and has remained so. Both these cases were operated on fifteen years ago, and I had an opportunity of questioning the subject of this second operation a few days ago in the presence of Dr. Robinson of the infirmary here, and he remains perfectly well. The third case is that of a respectable female who lived then, and does still, in the same street with me; she had a great abhorrence of being cut, and if I had not operated in this way would not have submitted to an operation at all. I had opportunities of course of seeing her often, and of watching the case; it differed, however, in no respect from those I have detailed, and she has remained entirely well of it ever since.

It is 13 or 14 years since it was done. I at first thought that I had made a discovery of a new mode of operating in a very painful and troublesome complaint, and so it really was to me, as I never had heard of it, or seen any thing of the kind done, but in looking into old Heister, I there discovered that something of the sort had been performed long since, but for some reason must have fallen into very general disuse. There are many cases in which I am convinced it might be used with advantage, but it is quite clear that it never can be more than an auxiliary to the knife, which alone can trace out the different channels through which a complicated fistula may wind. It is, however, a useful remedy in certain cases, and one which, if properly done at first, and carefully watched afterwards, may, I feel certain, be perfectly relied on.—*Dublin Med. Press, May* 13, 1846, *p.* 289.

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155.—ON ARTIFICIAL ANUS.—By Leonard Trant, Esq., Dublin.

[In two former volumes we have given some interesting matter on this subject. One of the best reviews of this branch of surgery will be found in the British and Foreign Medical Review, for October, 1844. A most admirable treatise on the same subject is in the Cyclopedia of Practical Surgery, by Mr. Teale, of Leeds, under the head of "Intestinal Fistula." In Retrospect, Part X., Art. 58, and Part XI., Art. 63, will be found much to interest the reader. In arranging our materials for these volumes, we completely overlooked a case of great practical value, which was published in May, 1845, by Mr. Trant, of Dublin.

The subject of this case was a female, aged 56, who was admitted into the Cork Street Hospital, on the 28th of October, 1840, having laboured seven days under strangulated inguinal hernia of the right side. An operation was performed, and the protrusion was found to consist of "a loop of small intestine, about four inches in length, highly inflamed, and of a dark brown colour. At its most depending part, however, a depressed and flaccid patch (of a blackish hue) occupied fully two inches of its entire cylinder. On examination it was found to be in a state of complete sphacelation, although no well-defined line of separation had as yet distinctly established itself between the living and the deadened parts." The stricture was liberated carefully, so as not to destroy any adhesions the intestines might have formed in the vicinity of the ring, and the separation of the gangrenous parts was left to the efforts of nature, as it was considered that the discharge would thus be more gradual, and consequently less liable to shock the system, in her exhausted state, than the sudden gush that would necessarily follow the free division of the deadened parts.

From this condition she ultimately recovered, subject, however, to the distressing and debilitating effects of a preternatural anus at the groin.]

FIG. 1.

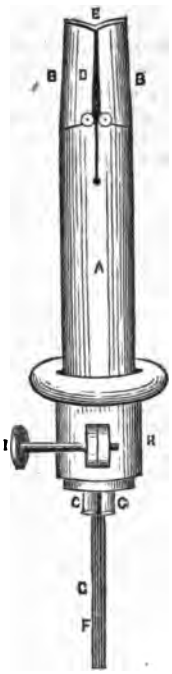


FIG. 2.

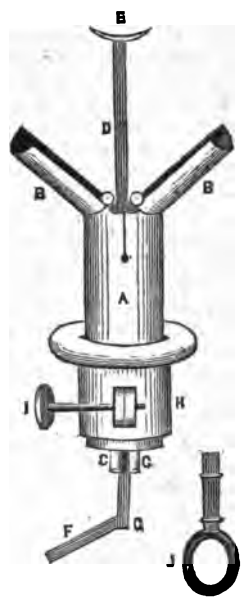


FIG. 3.




**Fig. 1.**—Represents the instrument, which is silver externally, and about three inches and a half in length, arranged for introduction, with the wings folded, so as to present a cylindrical appearance. The letters correspond to same parts as fig. 2.

**Fig. 2.**—Represents the instrument with its wings expanding, and the propeller pushed forward, as in the cavity of the intestine, during application.

**A.** The body. BB. The right and left wings. CC. The screws by which the respective wings are moved. D. The propeller. E. The concave extremity of propeller. F. The end of propeller, by which the concave extremity is pressed against the éperon. G. Screw for fixing the propeller. H. Shield which is moveable. I. Screw for fixing Shield.

**Fig. 3.**—J. The key by which the different screws are turned.

The emaciation and wasting of her person has increased considerably, and a gradual sinking of her vital powers is quite observable; the artificial opening has remained stationary (without exhibiting the slightest alteration in its size) for the last fortnight, so as to induce a feeling that the powers of nature, unassisted by art, were incapable of making further progress in restoring the parts to their normal state; or even should the natural process ultimately succeed (which was a matter of considerable doubt, from the prominent position occupied by the septum), it would require such a length of time to accomplish its object, that the unfortunate sufferer would in all probability fall a victim to inanition (before it could take place) from the defective and incomplete manner in which the digestive functions were carried on.

From the distressing and dangerous position in which the disease had now placed her, as well as from her own pressing solicitations, that something might be done to relieve her, if possible, from the sufferings she then endured, a careful examination was made of the parts connected with the artificial opening, when the extremity of the ventricular portion of the gut could be distinctly seen at the bottom of the wound, separated from the opening of the anal portion by the éperon, which covered it in a valvular manner. A soft gum-elastic catheter was passed beneath the éperon, so

as to push it gently to one side, by which means the orifice of the anal portion was brought into view, which appeared retracted and much diminished in calibre. On the catheter being withdrawn, the septum was again pressed back on the anal opening by the discharge passing down from the upper portion of intestine, rendering it quite impossible that any of the intestinal fluid, passing from the upper extremity of the tube, could obtain admission into the anal opening so long as the septum retained its prominent position with respect to the divided extremities of the gut, and thereby, also, directing the stercoraceous matter flowing from the ventricular portion of the tube directly to the preternatural opening in the groin.

As the éperon from its projecting position appeared to form the chief obstacle to the restoration of the calibre of the tube, it was quite palpable that a cure could not by any possibility be effected unless this obstruction was removed, to accomplish which two different modes have been recommended—the one, to push it back towards the abdominal cavity—the other, to divide it either by section, ligature, or by more gradual section, as adopted by Baron Dupuytren. Not, however, feeling perfectly convinced as to the safety attending the latter mode of proceeding, I determined to adopt the former, it appearing to be a more safe and feasible means of establishing the continuity of the canal, as the pushing back of the éperon by pressure from without would be assisted by the retraction of the overstretched mesentery from within, so as to favour each other in overcoming the acuteness of the angle at which the divided intestine was united, and thereby placing the two extremities of the tube in a more parallel direction, and consequently, a more favourable position for restoring its calibre.

With the intention of assisting the efforts of nature in accomplishing this object, I constructed an instrument—(it was manufactured by Mr. Millikin, of the firm of Messrs. Read and Co., Parliament-street, whose intelligence and ingenuity as surgeons' artists I have had frequent opportunities of witnessing), which is of a cylindical form, about three inches and a half in length, and a quarter of an inch in diameter at each extremity. By its formation it admits of being passed through the artificial opening in the groin, so as to place it on the éperon at the bottom of the wound, where it can be retained for a considerable time without producing the slightest inconvenience. As it does not whilst in the intestine offer any obstruction to the passage of the fæcal matter flowing along the cavity of the tube, it also acts as a forceps in retaining the anterior wall of the intestine in close contact with the posterior surface of the abdominal parietes, whilst the propeller is pressing back the éperon towards the spine, consequently the danger of separating the delicate adhesions in this situation is prevented, which might otherwise cause a fatal extravasation into the cavity of the abdomen. Having, as a preliminary step to the instrument being used, accurately ascertained the relative position of the orifice of the anal portion of intestine with respect to the other parts engaged in the formation of the artificial anus :

On the 7th of January, 1841, the patient was placed in an extended position, when the extremity of the instrument was introduced through the artificial opening, and gently pressed forward until its further progress was resisted by the éperon, against which it was held in close contact, whilst the wings were expanded in the cavity of the intestine, so as to place them at right angles with the body of the instrument, and as the extremity of the propeller was kept closely applied to the septum, the wings, consequently, from the construction of the instrument, expanded, one in each portion of the tube, thereby bringing the anterior or free wall of the intestine on each side of the artificial opening into close contact with the posterior surface of the abdominal parietes. The shield on the outside was then pushed down on the integuments surrounding the opening of the artificial anus, so as to act in conjunction with the wings (which were *expanded in* the cavity of the intestine), as a kind of forceps on the interven-

ing parts, retaining them in close contact with each other, whilst the propeller was pressing back the septum toward the spine. The propeller having gently pressed back the septum to the extent of three-quarters of an inch, it was then retained in that position for a period of twenty minutes, when it was removed. During this proceeding she did not experience any inconvenience, either from the retention or introduction of the instrument. An enema was ordered to be thrown into the rectum, when some white hardened mucus passed off with the injection. As the fæcal matter still passed freely through the artificial opening, an enema was thrown into the rectum daily, and in each instance was returned without bringing away either flatus or feculent matter. On the 14th of January, as no feculent evacuations was observed to have taken place by the natural passage since the introduction of the instrument, it was again applied, as on the former occasion, and was retained in the intestine for a period of thirty minutes, during which time the propeller was gradually pressed back, so as to remove the éperon half an inch further from the artificial opening than on the previous application; it was then removed, and an enema ordered to be thrown into the rectum in the evening, which came away without producing any feculent discharge. On the following morning, however, she complained of being attacked during the previous night with a violent griping sensation in the hypogastric region, when a considerable quantity of flatus was disengaged from the rectum. Towards the evening of that day she experienced a painful colicky sensation, accompanied by an itching at the verge of the anus and a feeling of heat in the region of the rectum. During the night a considerable quantity of flatus and fluid stercoraceous matter passed through the natural opening; fæcal matter was still, however, discharging freely through the artificial anus, but was apparently diminished in quantity since the natural passage had been established.

For the five following days what passed from the rectum appeared to possess all the essential characters of well-formed feculent matter, whilst that which was passing from the artificial anus was a thin, bilious, and nearly inodorous fluid; that from the rectum, was also of a fluid nature, and was evacuated three or four times during each day, and was occasionally preceded by a colicky sensation. On the 20th, the instrument was again applied for the third time, after an interval of six days from its last application, when the propeller, as on the former occasion, was steadily pressed against the septum, so as to push it still half an inch farther from the artificial opening than on the previous application. It was retained in that position for twenty-five minutes, but as she appeared to experience some slight colicky sensations during its retention, it was consequently removed. On the following day the evacuations from the rectum were observed to be less frequent and more solid than any she had passed by the natural opening since they had taken that course, whilst the discharge from the artificial anus was perceptibly lessened in quantity. From this period the evacuations were voided partly by the natural opening, and partly by the artificial anus, until the 27th, when the entire of the feculent matter had taken the ordinary course by the rectum, and the artificial aperture had contracted to the size of a large pin-hole, through which some flatus and a thin yellowish fluid occasionally passed, so as slightly to stain the dressings which covered it. On the 21 of February, it was touched with strong nitric acid, and a slight degree of pressure was made on the part by a small pad and strips of adhesive plaster. On their removal after three days, the opening was found completely cicatrized, and the excoriation, which had given her so much uneasiness, had assumed a healthy appearance, and was completely covered with cuticle in a few days afterwards by the application of zinc ointment. From this period the intestine accurately performed all its functions, and her strength and flesh rapidly returned, although she consumed less food daily than when the artificial anus was open.

[The patient continued to do well, and at the date of Mr. Trant's report,

four years subsequent to the operation, she was pursuing a laborious occupation. She was, however, recommended to wear a truss. The projecting ridge of the intestinal wall separating the two portions of intestine, which open at the artificial anus, was named by Scarpa promontario, and by the French surgeons *eperon*. This prominent ridge constitutes the obstruction which interferes with the direct passage of intestinal matters from the upper to the lower opening in the tube, and in some instances it constitutes a complete valve, altogether preventing the entrance of alimentary matters into the lower portion of intestine, and conducting them to the exterior of the body by the preternatural opening. Desault attempted to push back the obstructing ridge by linen tents, and Dupuytren devised an instrument for effecting the same object, but with so little beneficial effects, that he soon abandoned its use. (See Teale on Hernia, p. 187.) Mr. Trant has rendered great service to surgery, in having constructed a much more perfect instrument than that of Dupuytren, and in having employed it with signal success.

In the accompanying wood cut, we have endeavoured to illustrate this subject. In the first diagram, E represents the éperon, or portion of intestine, which projects downwards, in such a way that the contents of the upper portion of the bowel must necessarily escape at the artificial anus, being conducted there by the éperon, which thus destroys the continuous course of the alimentary canal. But if this projection, which may vary considerably in shape, be pushed out of the way, as it appears to be in the second diagram, by Trant's instrument, the continuity of the canal is preserved, and the contents will find their way downwards to their natural outlet. It is evident that the size of the instrument must be varied according to the size of the artificial anus, which in Mr. Trant's case was not above the size of a sixpence, and which generally has a disposition to contract. *Dublin Med. Press. May* 14, 1845, *p.* 305.

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## ORGANS OF URINE AND GENERATION.

156.—LITHOTRITY.—By Sir Philip Crampton, Bart., &c., &c.

['The way of arriving at a correct conclusion as to the relative advantages of lithotomy and lithotrity, can only be by a careful investigation of the results of the respective operations. Mr. Key has led the way in this true path of inquiry. Sir Philip Crampton, in an introductory lecture at the Meath County Hospital, last year, gives the result of forty years' practice, during which time he has himself operated on sixty-eight individuals—on forty-nine by lithotomy, and on nineteen by lithotrity, and on two of these by a combined operation, consisting of lithotrity and cystotomy, or rather by what Dr. Willis calls lithectasy, by which he means opening the membranous part of the urethra, and dilating, but not dividing, the neck of the bladder, after the calculus has been crushed by the lithotrite. It is to M. Civiale that the honour is due for having first constructed and then successfully applied an instrument for crushing and reducing to powder a stone in the bladder of a living man, and the Academy of Medicine hailed him as the inventor of lithotrity, a title which Sir Philip Crampton considers justly due to him, although it is to Heurteloup that we are indebted for the invention of lithotripsy, which is]

The seizing of the stone with a two-branch curved instrument, instead of a three-branched straight one, and reducing it to fragments by means of repeated blows of a hammer. This is the *perculeur courbe a masteau* of Heurteloup, and it is, beyond all comparison, the best instrument that has as yet been invented for pulverizing calculi in the bladder; and this is true, whether the effect be produced by percussion, when the branches are closed on the stone, by the blows of the hammer, or by compression, as when they are closed by the action of the screw. The best proof of the superiority of the percuteur to the branch instrument, is the fact that it is the instrument which is now exclusively employed by Civiale and by every lithotritist in Europe and America. In justice to a most ingenious artist it is but fair to state, that an instrument, in all material points, identical with the Baron Heuteloup's was invented and executed by Mr. Weiss, of London, so early as the year 1824. Whether or not this instrument of Mr. Weiss's suggested the curved percuteur to the Baron is more than I will venture to decide, for nothing is more natural or of more frequent occurrence than that two ingenious men, whose minds are working on the same subject, should hit upon the like contrivance to effect the same object. That Mr. Weiss did not take his idea of the two-branch instrument from the Baron is certain, because we have the unquestionable evidence of Sir B. Brodie as to the fact of his having seen the instrument with Mr. Weiss in 1824; and the character of the Baron for high-mindedness and candour must place him beyond the reach of suspicion that he pirated the invention of Mr. Weiss.

[The first case of lithotrity performed in Ireland was by Sir Philip Crampton, in 1834, in the Meath County Hospital. The operation was only repeated once, and in less than a week's time the whole of the detritus had come away. Sir Philip asks what is the problem which lithotrity has to solve? According to Civiale it is as follows:]

1st. The reducing of calculi within the bladder into fragments sufficiently small to be discharged or removed through the natural passage. 2dly. The effecting this by such means as shall excite no dangerous irritation in the urinary organs. 3dly. The freeing the bladder or urethra from the fragments which these organs may not have the power to expel.

[The best instrument for performing the operation of lithotrity, is Baron Heurteloup's or Weiss's curved percuteur. The late Mr. Oldham improved this instrument by carrying out a suggestion by Sir Philip Crampton, by which fragments of the calculi are prevented from accumulating between its jaws. The invention of the screw is due to Mr. L'Estrange, of Dublin. Sir Philip in proceeding to speak of the operation, observes that,]

The preparation of the patient is general and special. The general consists in light diet, abstinence from fermented liquors, free bowels, without purging, the use of the hip-bath; if the urine be acid, administering alkalies combined with uva ursa or Peruvian bark, and Vichy water; mineral acids when the urine is alkaline, and the infusion of Pareira brava when there is mucous deposit; also absolute rest; with occasionally anodyne enemata. The special preparation may be summed up under the heads of gradual dilatation of the urethra when necessary; division of its orifice, when preternaturally contracted; and the frequent introduction of the catheter; on this latter I lay the greatest stress, as, if properly conducted, it allays the irritability of the urethra and the bladder.

Here, says the editor of the Dublin Quarterly Journal of Medical Science, Sir Philip Crampton demonstrated the position of the patient on Heurteloup's bed, and proved that a fixed point in the instrument is not only unnecessary but dangerous. He also exhibited Amussat's hand-vice, applicable when percussion by the hammer is employed, and showed the mode of injecting the bladder, cautioning his hearers against the too rapid introduction of the fluid—more than one fatal case having arisen from this cause. In executing this manœuvre the water should be so slowly introduced as to imitate, in some degree, its descent from the kidneys. In performing the

operation, the various steps of seizing the stone, and how it was effected, were gone through, as well as the removal of detritus from the bladder, by means of the lecturer's invention of the exhausting apparatus.* He also showed the mode of removing fragments from the urethra by cutting down upon them, as well as by means of Leroy's jointed curette.

[A much more important consideration than the mere mechanical part of lithotrity or even the skill of the operator, is, the selection of cases proper for the operation, since there are many in which it would not only be unsuccessful, but fatal; at the same time we should bear in mind that it may, and has succeeded in those cases where cystotomy would certainly prove fatal: as where the patient is laboring under phthisis, albuminuria, or extensive disease of the liver. And should the stone be so large as not to admit of extraction through the perineal opening, then lithotrity or lithectasy may afford relief.]

It appears, then, that cystotomy and lithotrity are not to be considered as rivals, and that the question, as to which of the operations should be the rule, and which the exception, should never be brought into discussion; each operation has its special province, the boundaries of which (if indeed they admit of being fixed at all) can be determined only by a comparison of a vast collection of facts, carefully noted, and, above all, faithfully reported, and properly authenticated.

[It may be asked in what estimation is this operation held in England? The following is the opinion of Sir Benjamin Brodie in his lectures on Diseases of the Urinary Organs.]

"It is due to you," says this sagacious practitioner, "that you should be made acquainted with the unfavourable circumstances which may attend on this mode of treatment; but you are not to suppose that it often happens that these exist to any considerable extent, or that the probability of their occurrence is sufficient to counterbalance the great advantages which the new operation often presents over that of lithotomy. It would be a great error to represent it as preferable on all occasions, but it is so in a great many instances. In boys under the age of puberty lithotomy is so simple, and so generally successful, that we ought to hesitate before we abandon it for any other kind of operation. "There is also a manifest objection to lithotrity in these cases, on account of the small size of the urethra, which is such that it would not admit of the introduction of instruments of sufficient strength to crush a calculus of more than moderate dimensions. In the female sex the extraction of a calculus from the bladder by the ordinary methods is attended with little danger; while the operation of crushing it is rendered difficult, in consequence of the short and wide urethra allowing the water which has been injected into the bladder to

* The apparatus consists of a strong glass vessel, of an oval form, and six or eight inches in length by three in diameter, and capable of holding about a pint and a half of water; to this vessel is attached a tube of about half an inch bore, furnished with a stop-cock. The air being exhausted by means of an exhausting syringe, and one of Heurteloup's wide-eyed steel evacuating catheters being introduced into the bladder, it is next attached to the exhausted vessel; the stop-cock is then turned, and a communication being thus established between the bladder and the glass, the pressure of the atmosphere is by this means brought to bear on the bladder, and supplies an expulsive power, which may be increased to any required amount. The lecturer stated that he had an opportunity of testing the efficacy of this instrument in the presence of Mr. Liston, on the case of Mr. Rodger, a gentleman of past seventy years of age, who had been twice operated on by Baron Heurteloup. Sir Philip operated a third time, and emptied the bladder (which for several years had been totally deprived of all expulsive power) of the whole of the detritus. Mr. Rodger lived for three years after the operation, and suffered no return of the calculous affection. Sir Philip repeated the experiment in our presence with complete success, upwards of two drachms of pulverized calculus having been drawn at once from the bladder into the glass globe. This apparatus is extremely useful in clearing away the detritus from the bladder, when its expulsive power is impaired or destroyed; so frequently the case in elderly people.—Ed. Dub. Journal.]

escape by the side of the lithotrity-forceps before the operation is completed.

In cases in which the calculus has attained a very large size, it is often difficult to seize it with the lithotrity-forceps; the operation of crushing requires to be repeated a great number of times, so that many weeks may elapse before the cure is accomplished; a larger quantity of fragments is left in the bladder, of which the necessary consequence is a great liability to inflammation of the mucous membrane; and of course the inconvenience produced by the passage of the fragments along the urethra is multiplied, as compared with what happens when the calculus is smaller. These circumstances form a sufficient objection to the operation of lithotrity in these cases. It is true, that they are unfavourable cases for lithotomy also; but I have little doubt that the latter method is the safer of the two. It admits of a question, whether, in such cases, the two modes of operating may not be advantageously combined, the calculus being crushed into three or four pieces first, and extracted by the usual incision afterwards.

The operation of lithotrity, as I have already observed, is not well adapted to those cases of enlargement of the prostate gland, in which the patient is enabled to empty the bladder by his own efforts, unless the calculus be of a small size, so that there may be no great difficulty in washing the minute fragments, into which it had been crushed, out of the bladder, through a large catheter.

There is also another objection to the operation in some cases of enlargement of the prostate, viz., that the tumour which projects from it into the cavity of the bladder, makes it difficult to elevate the handle of the forceps sufficiently to seize the stone easily in the usual manner.

[Mr. Liston, who ranks so high as a lithotomist, is less in favour of the operation than Sir Benjamin Brodie. The most recent writer on the subject in England is Dr. Willis.]

Speaking of the supersedence of the cutting operation, he says, "such a substitute was, in its first introduction, and for a considerable time afterwards, believed to have been discovered in lithotrity. But this is beyond all question a rotten staff, which, leaned upon by all who suffer from stone, will certainly fail in five-sixths of the number; nearly one-half will find that it is totally inapplicable to their case; from one-third to one-fourth will fall immediate victims to its determined application; and from one-third to one-fourth will escape to lead miserable lives from diseased bladder, and then die of diseased kidneys; not more than one in three or four of all who were held favourable subjects will find it a safe, effectual, and final remedy for their disease. The public and professional mind has been singularly abused in regard to the value of lithotrity as a general means of treating stone in the bladder."

This is a terrible picture; nevertheless, I believe, if applied to lithotrity, considered and employed as a substitute for lithotomy, it is not too highly coloured. Dr. Willis supports his opinion by a reference to what he considers as authentic documents (for when unfavourable to the operators, and given by themselves, they may be safely so considered).

[It is from a number of unsuccessful cases that Dr. Willis derives his data as to the circumstances under which this operation is admissible or inadmissible.]

"Lithotrity," he says, is admissible, and only admissible, in cases in which the bladder is perfectly healthy, and in which the stone is small, of the size of a filbert, a shelled almond, or it may be, a nutmeg at the utmost; under all other circumstances it ought to be held impracticable. In other words, lithotrity is admissible where it is estimated that the stone can, at one sitting, be seized and reduced to fragments of sufficient minuteness to be passed by the urethra. No second, certainly no third operation ought ever to be contemplated; if the patient who has had lithotrity performed on him, is not relieved at once, he is in imminent danger of losing his life.

Lithotrity, I do not hesitate to say, has now been fairly tried, and found wanting as a general means of relief for stone. Restricted to the circumstances just indicated, it is a great addition to our chirurgical therapeia; applied indiscriminately, and as a substitute for lithotomy, and all other means of dealing with stone in the bladder, it is a most fatal present made to humanity."

Now, it must be remembered that Dr. Willis draws his conclusions from documents which have reference chiefly, if not altogether, to the original operation with the three-branch instrument, and the drill, as invented, or at least first practised by Civiale;—but even as applied to this operation, under the limitation so clearly pointed out by Civiale, his picture is, I should say, too highly coloured; but if applied to the operation as now performed with Baron Heurteloup's percuteur, I have no hesitation in saying that it is far from being a correct representation of lithotrity; and this I am in a condition to prove upon unquestionable evidence—evidence which I am not afraid to say is the most exact that has yet been offered on any disputed point of surgical practice. I propose, then, to take a period embracing the last eleven years, and to give a list of every case of stone in the bladder on which I was consulted during that time. I will then give the particulars of each case, including an account of the operation (if any) which was performed for its relief, together with the result of the operation at the time, and the issue of the case up to this day; and, finally, the actual state of the patient shall (wherever it is possible) be confirmed by his own testimony. By giving a catalogue *raissonne* of all the cases, whether treated by lithotrity or cystotomy, you will be far better enabled to judge of the description of case to which each operation is respectively applicable, than by the most elaborate generalities.

From May, 1834, to September, 1845, I have had to deal with thirty-four cases of stone in the bladder, of which four were females, and twenty-nine were males. All were adults, with the exception of two boys, one of ten years of age, and one of six; they have been disposed of in the following way.

Two—the Rev. Gideon Ousley, aged eighty-one, and a gentleman who resided at Coolock, but whose case I did not note—were set aside as unfit for any operation; both had diseased bladder and kidneys.

Four were sent to Baron Heurteloup, and were cured by lithotrity. See the Baron's Treatise on Lithotrity, in which those cases are detailed.

Twenty were operated on by me by lithotrity; and nine ditto by cystotomy. Total, 35.

Of those operated on by lithotrity all were adults.

Of those operated on by cystotomy, three were under twelve years of age, two boys and a girl.

Six were adults and males.

All that were operated upon by lithotrity were cured, with the exception of Clark, and in his case the operation cannot be said to have failed, because it was performed for the express purpose (as stated in a clinical lecture which preceded the operation) of bringing the stone into a condition to be removed by lithotomy, and this the operation fully effected; the man lived for three months after the last operation by lithotrity, and died of rupture of the stomach caused by an excess in drinking.

In the case of the Rev. Mr. Druett, the operation (as far as it went) was perfectly successful; the cure was not completed, from causes that had no reference to the operation. All that were operated on by cystotomy recovered. Major Percival, it is true, died three months afterwards, of inflammation of the kidney and testicle, but the wound had nearly healed. It is right to observe that six months previous to the operation, Major Percival had suffered a similar attack of inflammation of the kidney, attended with suppuration, which reduced him to such a degree that no expectations were entertained of his recovery. It appears, then, that of the thirty-three patients operated upon, nine only were submitted to cystotomy (about one-

fourth); it is not, however, to be inferred from this statement that out of any given number of cases of calculus only one-fourth should be operated on by cystotomy; such a conclusion would be manifestly erroneous, for if ten or twelve of the twenty-four operated on by lithotrity, instead of being adults, were children and old persons, the proportions might probably be reversed, and the cases suitable to lithotrity might be reduced to ten or twelve, and the difference placed to the credit of cystotomy—and this affords a striking illustration of the utter uselessness (not to say absolute mischief) of drawing any inference favourable or unfavourable to lithotrity from a statement (however accurate) of the mere numbers operated on, without reference to the circumstances of each particular case. It is on this account, that I have ventured on the somewhat unusual course of giving a detailed and authenticated list of every case of calculus that has been presented to me within a period of eleven years (commencing at the time at which I began to practice lithotrity), with the circumstances of each case and the result, up to the present day. The numbers (I admit) are very far from being sufficient to justify any general conclusion being drawn as to the respective value of the old and new operations, but they are sufficient to establish some points of great practical importance upon which surgical opinion is still much divided. 1st. It is abundantly proved that lithotrity may be successfully applied to cases which are considered to be beyond the domain of cystotomy. 2d. It has been proved that, in certain cases, to which neither cystotomy nor lithotrity are applicable singly, the combination of the two operations (and especially the combination of lithotrity with lithectasy) may be employed with success. Finally. It is proved that when the urinary organs are in a healthy state, stones of great hardness, and upwards of an inch and a half in diameter, may be removed by lithotrity with safety. It by no means follows, however, that in such cases, lithotrity is always to be preferred to cystotomy; the choice of the operation must often be determined by various considerations (not purely surgical) connected with each particular case, and having reference to the operator as well as to the patient. A very skilful and successful cystotomist may not have sufficiently practised lithotrity to qualify him to perform it with the same chance of success with which he might perform cystotomy: and a patient who might be able to make up his mind to suffer one operation, however painful or dangerous, might be quite unequal to the effort of submitting to several comparatively slight ones.

In addition to the morbid states of the bladder, so well described by M. Civiale, I should say that a contracted and irritable urethra, an enlarged and irritable prostate gland, and, above all, a constitution prone to sympathize with a disordered state of the urinary organs in general, and with the urethra in particular, a large and very hard stone, or numerous small ones, forbid the application of lithotrity, and bring the case within the proper domain of cystotomy. Lithotrity is in general considered as inapplicable to children under fifteen or sixteen years of age, on account of the narrowness of the urethra in early life, and the comparative safety of cystotomy in young subjects; but, considering that in children the urethra is (except at its external orifice) highly dilatable, and that the most violent symptoms of calculus in the bladder are often created by the presence of a stone so small that it might with the greatest facility be crushed, and the fragments extracted, at a single operation, I cannot but hope, that at no distant period the operation of cystotomy will be superseded by lithotrity, in a great proportion of cases of calculus in children. But a few days since Mr. Cusack performed cystotomy on a child of three or four years of age, in Stevens' Hospital. The moment he divided the membranous part of the urethra, the stone started out into the external incision, and was removed by the fingers of the operator; only the membranous part of the urethra had been opened, the prostate and bladder were untouched. What a triumph it would have been for lithotrity, and what an advancement in operative surgery, if litho-

trity had been applied to this case. The bladder not having been opened the wound was healed in three or four days, and the child was perfectly cured. Nevertheless, it is impossible not to regret, for the sake of the advancement of operative surgery, which is immeasurably improved by everything which renders operations more safe and less painful, that lithotrity had not the merit of this cure.

[The opinion of Mr. Liston, expressed of lithotrity in his Elements of Surgery in 1840, it is due to him to state, is now much modified.]

*Dublin Quarterly Jour. of Med. Science, Feb.*, 1846, *p.* 1.

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157.—ON LITHOTOMY WITH ALBUMINOUS URINE.—By B. Phillips, Esq., Assistant Surgeon to the Westminster Hospital.

[Mr. Phillips describes an interesting case of lythotomy, performed upon a patient whose urine was so highly albuminous, that, on the application of heat, nearly one-fourth of the fluid in the tube became solid; there was also a slight excess of lithate of ammonia present. When the patient came under Mr. Phillips's care, he was much afflicted with the ordinary symptoms of stone; the bladder was very irritable; he was fifty-six years of age. A consultation was held on the case, and it was decided that the presence of the albumen was probably caused by the irritation excited in the kidney by the presence of the stone in the bladder, and an operation was decided upon. Before the operation, the albumen slightly decreased in quantity. The operation is thus described:]

The external incision was made in the usual way, and was about three inches long: when Mr. Phillips got his finger into the wound beyond the second joint, he became sensible of the unusual depth of the perineum; as he could then barely distinguish the staff, and when the finger reached its groove very little of the indicator finger remained out of the wound; added to this, the prostate was so large and so hard that the knife did not easily pass through it, and when it had done so, not more than an inch of the handle remained outside of the wound. The bladder, too, was so small and so intolerant of fluids, that it could not be made to project. Some difficulty was experienced, from the fixed and inconvenient position of the stone, in getting it between the blades of the forceps; when this was accomplished, the removal was comparatively easy. A piece of oiled lint was passed into the bladder, to conduct the urine. All went on without drawback till the eleventh day, when he had a rigor, but it did not lead to mischief. On the 16th day, the urine passed freely by the urethra. For a time the urine was heavily charged with lithates, and the wound became encrusted with them; but under pareira brava and liquor potassæ it was gradually brought to nearly a healthy condition, and on the 16th day the urine which passed by the urethra exhibited only faint traces of albumen when treated by nitric acid and heat.

[In six weeks after the operation, this patient was discharged cured; the urine was quite free from albumen. Mr. Phillips observes:]

This point is one of great interest in practice, and it has been laid down by an eminent authority, that under such circumstances it is imprudent to operate at all. Whatever may be the value of that rule in other cases, I am by no means satisfied of the propriety of its application in cases of stone in the bladder; and if it had been acted upon in the present case, the patient would still be suffering from his disease. The question is undoubtedly a very delicate one: does the albumen result from irritation within the bladder extending to the kidney, or is the irritation confined to the kidney itself?—in the one case removable by operation, in the other beyond its reach. I know no test by which we can distinguish between them, but the present case is a proof that such a distinction does really exist, though we are at present unable to detect it.—*Med. Gaz., Jan.* 9, 1846, *p.* 52.

### 158.—ON LITHOTOMY.

At the meeting of the "Academy of Sciences in Paris," on the 27th of April, M. Leroy d'Etiolles read a paper containing the description of an entirely new system of lithotrity; by this new plan the stone is ground to powder in a few minutes by the oscillatory movements of an instrument, from the central axis of which project in every direction a number of blades and files. This pulverisation will be chiefly applicable to solitary and voluminous concretions, the common method of fragmentation, followed by immediate extraction, still being, in M. Leroy's opinion, preferable when the calculi are small or numerous. Artificial and immediate extraction of the particles of the crushed stone considerably hastens the cure, and has been already used by the author with advantage in upwards of one hundred cases.

M. Heurteloup read, at the same meeting, a paper referring to the same subject. He also advocates the immediate removal of the pulverised calculus, and asserts that this artificial extraction takes up no more time than the operation of lithotomy. M. Heurteloup brings forward, in support of this modification of lithotrity, the possibility of a portion of stone being lost in the bladder after crushing, and becoming inaccessible to instruments; and, secondly, the chances of vesical catarrh, when expulsion of the fragments is left to nature, and the dangers arising from their stoppage in the course of the urethra.—*Med. Times, May* 9, 1846, *p.* 89.

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### 159.—ON THE USE OF IODINE IN ENLARGEMENT OF THE PROSTATE.—By R. A. Stafford, Esq.

The power of iodine and the iodide of potassium in reducing glandular swellings is well known. I have employed it in nearly all cases of enlargement of glands, excepting those from malignant diseases, and have found it of the greatest service: indeed, its use in some instances has been attended by almost a miraculous effect—so rapidly has the swelling been reduced. It was this circumstance that led me to think it might be advantageously employed to reduce an enlargement of the prostate gland and its middle lobe. I felt it easy to cause it to be absorbed through the substance of the prostate gland, by using it in suppositories passed up the rectum, but the difficulty was, to apply it on the third lobe without touching any other part of the urethra. I made several attempts to accomplish this: first, through a tube; then in a groove at the end of a solid instrument; then by the method by which caustic is applied to a stricture, according to Ducamp's plan, and others; but none of these answered. I at length thought of a very simple mode of applying it, which is by charging a bougie at its point with the iodine, iodide of potassium, or any other substance you may wish, and then dipping it into melted tallow, so that a coating may be formed upon it. By such method I have been enabled to introduce any application I might desire up to the prostate gland, without touching the surface of any other part of the urethra. The bougie having reached the desired spot, its point is allowed to rest upon the diseased part, when the tallow gradually melts, and brings the iodine or iodide of potassium into contact with it, and by drawing the bougie gently backwards and forwards the necessary friction is produced.

I have found it advisable to be very cautious as to the strength of the application, for the prostate gland will not bear a strong preparation either of the iodine or iodide of potassium, at first. It is usually in an irritable or inflamed state; consequently even the mechanical pressure of the bougie will give pain. The preparations I have therefore used have been very mild. At first I have found it necessary to employ even anodynes, such as belladonna, opium, hyoscyamus, &c., to quiet irritation and pain. When these have subsided, I have begun carefully by introducing the iodide of

potassium, in the proportion of one grain to the drachm of unguentum cetacei, and increasing it as the patient could bear it. I have then gone on with two, three, four, five, and even as far as ten grains or a scruple to the drachm, according as the case required it. After this I have added iodine to it; half a grain, one, two, three, four, and even more grains, in the same manner. The surgeon who applies it can alone judge of its effects. It is requisite therefore that it should be introduced with considerable care. I have known instances where, from the injudicious employment of it, considerable mischief has ensued. Inflammation, ulceration, and retention of urine, have been the consequences. In some instances, also, where patients have fancied they could use it themselves, they, not knowing the anatomy of the part, have misapplied it, and produced considerable hæmorrhage, endangering life.—*From an Essay on the Prostate Gland, by R. A. Stafford, Esq., F.R.C.S.* *Med. Times, Feb.* 28, 1846, *p.* 440.

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### 160.—ON THE TREATMENT OF VENEREAL DISEASE.

By W. Acton, Esq, Surgeon to the Islington Dispensary, and formerly Externe to the Venereal Hospitals of Paris. [In speaking of the treatment of venereal affections of the scalp, Mr. Acton observes:]

No time should be lost in the local treatment of alopecia. A patient finds much relief from warm baths, particularly when any irritation exists on the scalp. I desire the hair to be cut as short as fashion will allow, but I have never found it necessary to shave the head in the early stages of the complaint, and I question much if this is required, even in the more advanced periods, particularly if proper means be employed to check the disease. They consist in the application of stimulating washes or liniments to the scalp. A very simple and elegant one may be made by mixing equal parts of rectified spirit, eau de Cologne, and castor oil together. I employ castor oil, on account of its being the only vegetable oil which is soluble in rectified spirit, and the eau de Cologne covers the otherwise nauseous smell of the oil. If a stronger preparation be required, I recommend equal parts of honey-water,* and tincture of cantharides to be rubbed into the roots of the hair every night. The first effect of the spirit-wash will be but slight; in the course, however, of a few days, there will be some redness and irritation, and patients complain of a feeling as if something were drawing their heads, and little blisters will be seen scattered here and there. I need not say the application should be left off before such effects are produced, to be continued at intervals, as the case may require. Under this local treatment the hair will cease to fall off, and all tendency to ptyriasis disappear, the young hair will be seen sprouting freely; the spirit, however, will make the hair dry and untidy, particularly as the brush cannot be freely applied from the tenderness of the scalp. I have attempted to combine the cantharides with animal and vegetable oils, in which it is readily soluble, but, by keeping, the mixture becomes rancid; this prevents its employment at the toilet. To obviate the effects of spirit on drying the hair, some form of pomatum or hair oil should be freely used; but this subject I shall allude to in a future paper, when I propose publishing some experiments and investigations, in which I have been assisted by Mr. Jacob Bell, in the analysis of the quack remedies and pomatums adapted for the hair. The local treatment of the earliest forms of syphilitic affections of the head—that is to say, lichen, lepra, psoriasis, and impetigo, consists in the frequent use of the warm bath, taking care to soak the head well: under this treatment the scales become loose and detached, the skin assumes a healthy character, d the cephalic pains cease; the spots may be covered night and morning a. dilute citron liniment, made according to the following formula: olive wit.

omposite of honey-water varies, but, like eau de Cologne, is a highly perfumed y does not enter into its composition.

* The spirit; hon

oil, half an ounce; citrine ointment, one drachm. I am acquainted with no application so efficacious in scaly affections of the scalp; if kept in a well-corked bottle this liniment undergoes no change of colour, said to arise from the nitric acid which is given off when exposed to the air in pots.

In a recent lecture of M. Ricord's, the following pomade is recommended:—Purified beef marrow, sixteen parts; sulphur ointment,* sixteen parts; turpeth mineral, two to four parts; essence of lemons, sufficient to scent it. The employment of ointment in the treatment of mucous tubercles is very objectionable; cleanliness must be strictly observed; the affected parts washed with a diluted solution of chloride of soda, carefully dried and sprinkled over with calomel. Under this treatment the affection rapidly disappears.

In eczema impetiginodes, and in ulceration of the skin, the hair must be cut close immediately round the affection, and water-dressing applied; or the lint may be dipped in an aqueous solution of opium. Ointment is generally objectionable in all eruptions attended with oozing of fluid, particularly in eczema impetiginodes; the grease, mixing with the secretion, soon becomes rancid, forms a crust, the edges of which become excoriated, and what was the effect becomes a cause of irritation. In the instances where gummata and nodes occur on the head, the best local treatment consists in painting them over with tincture of iodine: this is also a good application to the edges of unhealthy tertiary ulcers.

Within the last few years, public attention has been called to the preparations of iodine; it has been vaunted above measure by some, and considered valueless by others, in the treatment of secondary symptoms. To quote two authorities only, my readers will judge the difference of opinion on its use. The late and much-lamented Dr. Williams, in his "Elements of Medicine," vol. ii., p. 165, in comparing this new mode of treatment with that by mercury, comes to the conclusion, that "iodide of potassium must be considered as infinitely superior to mercury in the cure of this once formidable disease." Sir B. Brodie, in the Lancet, in loc. cit., says, "It is now very much the custom to administer the latter (iodide of potassium) in cases of syphilis. No doubt it is an excellent remedy in some cases, and it comes in to your aid when you have reasons for not giving mercury; but if you ask me whether you can rely upon iodide of potassium as well as upon mercury, I say no. You may remove slight symptoms, by giving it for a time, and severe symptoms, by exhibiting larger doses, but, in the latter case, so far as I have seen, it does not make a permanent cure, for the symptoms return again. As a prophylactic, it is not to be compared with mercury." *Lancet, Jan.* 17, 1846, *p.* 69.

[Mr. Acton states that during the last three years he has met with cases where neither mercury nor iodide of potassium did good in the secondary forms of syphilis; and he gives a number of propositions by which the indications for their exhibition may be made as apparent as they now are in the primary and tertiary forms.]

Proposition No. 1.—Secondary symptoms occurring after a primary affection which have not been treated with mercury, are usually not in the least degree ameliorated by iodide of potash. Proposition No. 2.—Secondary symptoms occurring after a primary affection, which have not been treated with mercury, will as generally require for their cure the preparations of mercury, given in appropriate doses. Proposition No. 3.—Secondary symptoms, following sores treated with mercury, frequently persist, in spite of mercurial preparations, in some cases become agravated, or only yield to very large and dangerous doses of the mineral. Proposition No. 4.—These symptoms will very rapidly get well under iodide of potash, when administered in proper quantities. Every surgeon's experience must

* The sulphur ointment of the Venereal Hospital is made of flowers of sulphur, eight ounces, simple cerate, one pound.

furnish instances of the truth of the first and second propositions. Amongst many others that have fallen under my notice, I may cite the two following, as cases seen by other practitioners as well as myself:—

E. B—— contracted sores in 1841, and came under my care; simple treatment was employed, and the patient recovered, though leading a very irregular life, within three months. Secondary symptoms followed: a general practitioner was now consulted, who recommended iodide of potash. The disease steadily progressed, although the patient had taken twelve quart bottles of a mixture containing the salt. At this period I was again consulted; the mouth, tongue, and throat, were covered with condylomatous growths, as well as the scrotum, to an extent I have seldom witnessed in private practice, attended with patches of lepra and psoriasis on several parts of the body. I recommended mercury, to which the patient objected; but getting no better, Sir B. Brodie was consulted, who concurred in recommending the free use of mercury; no sooner did this mineral exert its influence, than all the symptons vanished, and this gentleman has enjoyed uninterrupted health since, is now married, and the father of two healthy children.

A second case, no less interesting, and proving the inefficacy of iodide of potash, is that of a gentleman, who in the summer of 1842 contracted what he supposed to be a gonorrhœa. Soon after, a sore appeared on the frænum. This patient being at the time in Paris, was treated by M. Ricord by simple means. After a tour, he returned to England with a few well-marked spots of lepra and psoriasis on the face and body. I recommended mercury, and a few pills were taken. This patient was advised by his friends to consult an eminent army surgeon, who deprecates the use of mercury in syphilis. I did not myself again see the patient, but was told by a medical friend that this gentlemen had taken iodide of potash for six weeks, and at that time remained spotted like a leopard. These, and several other cases I could cite, prove how inefficient is iodide of potash, though employed for a length of time, and seem to bear out the assertion I made in my work on venereal diseases, that secondary symptoms require mercury for their cure. Such a rule I now find, however, to have certain exceptions, which I shall immediately show, not depending upon this or that variety of eruption, as some authors assert, but upon the treatment of the previous primary symptoms.

A gentleman, sent to me by Mr. L. Parker, of Birmingham, stated, that twelve months previously he had contracted syphilis. Mercury was used, but it appeared that the patient's occupations prevented him taking the necessary precautions; secondary symptoms recurred, and it was at this period he came under my care. Imbued with the notion that iodide of potash was not beneficial in the forms of lepra, impetigo, and psoriasis, under which this patient laboured, I employed mercury. He at first improved, then relapsed, admitting that he partook freely of wine. As a consequence, ulceration attacked the alæ nasi, and dreading the consequence of tertiary symptoms, I immediately gave this gentleman iodide of potash. It acted like a charm, and he is now restored to perfect health, and travelling on the continent.

Another case of this kind came under my care about a year ago. A foreign gentleman, obliged to quit Paris, was recommended to me by M. Ricord; he was labouring under secondary symptoms, consisting of impetigo of the head, a few spots of lepra on the body, and psoriasis palmaris, with a trifling affection of the throat: as my friend, M. Ricord, had ordered the iodide of mercury, I continued the treatment, and although the patient took every precaution, the spots disappeared, only to reappear after slight exposure. Not finding my patient making the progress I desired, I was about to alter the treatment, when this gentleman disappeared for some weeks, and on his return told me he had consulted Mr. Key, who prescribed iodide of potash with marked benefit, for all the symptoms had disappeared

save and except some slight stains on the hands. This patient had been treated with mercury in England previous to going on the Continent, on account of an indurated sore, under the direction of an eminent surgeon. I must detail one more case. A gentleman contracted syphilis during the last summer; the sore became indurated, mercury was used and the chancre rapidly disappeared. I hoped secondary symptoms would not occur. Within four months of this contagion, a few spots of psoriasis appeared on the body and scrotum, accompanied with impetigo of the scalp, and the throat was seriously implicated by superficial ulceration. Mr. Lane and myself saw this gentleman, and we determined to give him iodide of potash; after a few doses all the symptoms disappeared, and he recovered, having taken only half an ounce of the salt.

Such cases as these prove most incontestably that secondary symptoms are not always benefited by mercury, as most authors believe, but require iodide of potash; and in collating my cases I find they arrange themselves under these two heads, proving that the surgeon must be particular in ascertaining the previous history of the patient, as furnishing him with the best indication for treatment. I believe the propositions will be proved founded on facts, at least I may affirm that they are the consequence of cases which have fallen under my notice; and far from theory having led me to draw the conclusions, my previous observations induced me to believe that all secondary symptoms would be benefited by mercury, and it was only by repeated cases of failure I was compelled to admit that iodide of potash was far preferable to mercury when the latter had been used in primary symptoms. I indulge the hope that similar mistakes will not occur, and that surgeons will be as generally unanimous in this part of the treatment of venereal diseases, as they are that indurated primary sores require mercury, or that periostitis and nodes are immediately relieved by iodide of potash.

[The opinions of the different authorities on the efficacy of the iodide are much at variance, but Mr. Acton, from the experience he had in France, once recommended the use of mercury in all early stages of constitutional syphilis. He has since modified this opinion, and no doubt it has arisen from more extensive experience, and from the fact, that in London, mercury is more generally employed in the treatment of primary symptoms than in Paris, and hence (according to the principle Mr. Acton wishes to establish) the iodide will be of more service in the treatment of the secondary symptoms. This will account for the difference in the opinions of M. Ricord and Mr. Acton on this point, assisted also by the fact that M. R. generally employed the mercury in combination with iodine, whilst in London it is given alone in the form of blue pill, or with chalk. Mr. Acton adds:]

I should further recommend a trial of iodide of potash in those numerous cases which come before us among dispensary and gratuitous patients, presenting secondary symptoms of the head and scalp in some modified form, in persons whose gums betoken courses of mercury, and who tell you that mercury has been given, salivation produced, yet the disease has relapsed. The salt is particularly advantageous to that large class of individuals in whom dissipation, prolonged courses of mercury, and inattention to the directions of a medical man, may be expected. In private practice, when unable to ascertain the previous course of treatment, or when mercury and the iodide have both been given, without any benefit, and your opinion is asked what further remedies are likely to be useful, I usually support the system by improved diet and change of air, and after a short interval, commence a course of iodide of potash, combined with tonics, in the manner I am about to recommend. Persons taking iodide of potash, in the usual manner of prescribing it, complain of pain at the pit of the stomach, and heat at the back of the throat, soon after swallowing the salt. To obviate these objections, I am in the habit of prescribing the salt, in solution, in the following manner: Two drachms are dissolved in three ounces

of water, and the patient is desired to put a tea-spoonful of the solution in a large cup of tea, night and morning, and to take the same quantity in half a pint of beer, or any other fluid in the middle of the day. It is impossible to say how long we should continue the use of the remedy; if, however, as usually happens, the patient gains weight and flesh, a surgeon would do wrong in discontinuing it for some weeks, and the dose may be increased according to circumstances.

I have found it, however, of no use to continue the iodide of potash, or increase the dose, after the first week or ten days, unless some amendment is visible in that period; otherwise we find it producing a hot skin, a parched mouth, and some fever, or we observe acne on the back or face, accompanied with some headache; in other instances, an unusual quantity of saliva is secreted, the gums become puffy, and bleed when the tooth-brush is used. These effects should induce the surgeon to omit altogether, or reduce the dose, which may again be resumed when these prejudicial results have ceased. *Ibid, Jan.* 31, 1846, *p.* 119.

When a person, presenting any eruptions on the head, consults me, and I find he has not taken mercury for the primary symptoms, I think it only waste of time to employ iodide of potash. Without absolutely affirming that sarsaparilla or other remedies will not cure the affection, I may state they have so often disappointed me, that I now never recommend them, but at once have recourse to mercury, as being the remedy most simple and certainly efficacious.

[The question, and a very important one, arises, What form of mercury is to be used? Ricord considers the pure mineral most soluble, as it forms when in the stomach a very soluble bilactate of mercury. Mr. Acton prefers the mercury with chalk. When the functions of the organs of digestion are once impaired by the action of mercury, it ceases to act efficiently, and Mr. Acton at once resorts to frictions. The only objection that can be urged is, the dirt they occasion. All are now agreed that the simpler the form of mercury to be absorbed into the system, the more efficacious will it be; although there is as much difference of opinion as ever as to the modus operandi in curing the disease. Mr. Acton observes:]

I desire the patient to smear a quantity of ointment, equal to the size of a horse-bean, on the inside of each calf of the leg or knee, every night, on going to bed; not rubbing it in as some have recommended, but merely passing the hand from above downward; by this means avoiding rubbing the hair in the wrong direction, and producing irritation of the bulbs and subsequent tenderness. If this is pursued for a few minutes, the ointment will not be easily detached from the skin when the clothes come in contact with it, and absorption will take place quite readily enough. To prevent the sheets becoming black, it will be only necessary to sleep in old drawers, if the patient usually wears them, or a pair of linen trousers, which may be destroyed when saturated with ointment. Every third or fourth evening the patient should take a warm bath, to remove the stale ointment that may be on the surface of the skin, and absorption of fresh ointment will thus be expedited, and the occurrence of eruptions prevented. I recommend the application of the ointment on the inside of the leg and knee as being preferable to the inside of the thigh, for several reasons: in this latter situation some of it is certain to be applied by the friction of the trousers to the fold between the thigh and the scrotum: the heat and friction, together with the natural secretion of these parts, will soon cause the ointment to become rancid, and eczema, of a most severe form, is constantly occurring, which only declines as we leave off the ointment. It is difficult in these situations likewise to keep the linen from becoming smeared with the ointment, which in private is of the greatest importance, as washerwomen are very curious people, and, proverbially, gossips. If, on the contrary, the ointment be applied to the calves, neither the linen nor the bedclothes will be the least *soiled, and* it often happens that patients rub in without any of their family *being aware of* their using this usually dirty remedy.

I believe, in the present day, practitioners commit a great fault in suspending the use of mercury too quickly: so much has been written on the dangers of salivation, that we do not now even obtain the judicious effects of the preparation. We stop short of these; hence the number of relapses, and the surgeon lives in the fond hope that enough mercury has been given, until disappointed by a return of the complaint. *Ibid, Feb.* 14, 1846, *p.* 179.

[Mr. Acton gives us some excellent remarks on the use of nitrate of silver. He says:]

Experiments on inoculation have incontestably proved, that if caustic be employed soon after the receipt of the virus, all further effects may be stayed; they have, however, shown that up to the third day the disease is of a local nature, moreover confined to the parts with which the virus has come in contact, and that it is not necessary to cauterize beyond the extent of the ulcer, but that, on the contrary, the doing so is fraught with great mischief.

If a surgeon will inoculate a man, and watch the effects, he will find that, at the commencement, he can destroy effectually the virus by the slightest touch of the salt; little or no irritation will follow, and the application may be repeated at intervals. Before we employ nitrate of silver, the part should be carefully cleansed by being soaked in warm water, for the virus may exist on the surface of the neighbouring skin, and if not washed off, will reinoculate the sore when the little eschar falls, and undue blame will be thrown on the caustic. Although no other ulcer exists at the time of using the salt, frequently, in a few hours after, another sore, or a little pustule, will be met with, which, if precaution be not taken, will go on increasing, and the disease will spread rapidly. These circumstances explain several anomalies which have thrown discredit on caustic. The parts should now be carefully dried, and if it be an excoriation the surgeon is called on to treat, the skin should be put on the stretch, and the solid stick of nitrate of silver lightly passed across it, so as effectually to whiten the surface in its entire extent; all cracks and crevices must be treated in the same way. If a pustule exists, it should be opened with a lancet, the pus evacuated, and a pointed stick of the nitrate of silver introduced, so as to cauterize the walls of the pustule. For this purpose the caustic should always be kept pointed; and this may easily be done by wetting it and rubbing its sides against a piece of soft wash-leather. It is very difficult to obtain a point by scraping the stick of nitrate of silver, in consequence of the brittleness of the salt, and when once obtained, the caustic will retain its pointed character.

If the surgeon is called upon to treat chancres at the orifice of the prepuce presenting the appearance of cracks, he must draw back the prepuce gently, when he will be enabled to cauterize the entire extent of the chancre, but in repeating the operation, let him guard against breaking through the cicatrix, or this linear chancre will extend, the same observation applying to the treatment of chancres on the frænum; and to obviate the difficulty of healing such ulcers, I usually divide the frænum, and cauterize the entire of the divided surface. Without these precautions, it may be weeks before you will heal such sores. Reliance must not be placed alone on the salt and previous ablution, but extension of the disease should be stayed by lotions of an astringent kind; the one I prefer is a solution of pure tannin, in the proportion of two grains to the ounce of water, which not only checks the discharge, but seems to tan or harden the skin; the private patient, however, should be told, that this solution slightly stains his linen with a brown mark, or the lotion may tell tales to the family; to obviate this, a weak solution of sulphate of zinc may be employed, or, if desirable, dry lint; but dry lint has the objection, in some instances, of irritating the part, and, moreover, the little eschar is a long time in falling, and we are therefore prevented re-applying the caustic.

We now come to consider how soon the caustic should be re-applied. The rule I follow is to employ it as soon as the eschar is removed, and this will vary in many cases; generally speaking, it is sufficient to cauterize

once in 24 hours, particularly if the sores be numerous or large. More frequent applications might be useful, did they not produce irritation, and should swellings of the prepuce arise, the mischief will be greater than by allowing the disease to run its course, as we should be then unable to employ ablution; before removing the lint, let the part be well-soaked, or the little eschar may be detached, and the part made to bleed; it will be then only necessary to dry it and apply the caustic as before, very slightly.

I alluded above to the pain occasioned by caustic. When applied to a surface of considerable size, generally speaking, pain is very acute for a few minutes. I have known a few susceptible persons nearly faint from its effects; they describe it like what molten lead might be supposed to produce if thrown on the skin; but this gradually ceases, and a person is unaware that any soreness exists, unless the part be pressed or rubbed against; so much is this the case, that many persons are glad to have a chancre burnt, as the caustic destroys the morbid sensibility usually met with in syphilitic sores, dependent apparently on the ulcerative progress going on, if not checked by the nitrate of silver; and before 24 hours pass, this sensibility will return, and be again relieved by caustic. When the salt has been applied on several successive days its application is scarcely felt.

I shall be asked, perhaps, how long these repeated applications of caustic must be continued. In private practice, where we see cases early, or during the first day or two, one or two burnings will suffice; but in the more advanced stages, it may be necessary to continue them at intervals of 24 hours—for a week or ten days, in fact, as long as we believe any virus is secreted by the sore; and this is known by the ulcerative stage continuing, by the surface being covered with a yellow, chamois-leather-looking pellicle; whereas, when the virus has been effectually destroyed, the ulcers do not remain stationary, but become every day less and less in size, and healthy granulations spring up; in these cases it is better to omit the caustic, as it may prevent cicatrization, but we must have recourse to it again if the sore regains any of its specific characters. The surgeon will occasionally be disappointed in finding chancres progress less favourably than here stated: in spite of all his attempts to cure them, caustic fails; this is more especially witnessed in ulcers situated around the narrow prepuce, at the frænum, orifice of the urethra, or fourchette in the female; it is the situation of the sore rather than the want of efficacy in the remedy that prevents cicatrization; rest and attention to cleanliness, without rupturing the cicatrix, will alone bring about a cure; in these instances it is in vain to continue the caustic; its objects can be no longer attained, and it produces much mischief. *Ibid. April*, 25, 1846, *p.* 457.

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161.—ON THE TREATMENT OF THE SECONDARY AND TERTIARY FORM OF SYPHILIS.—By M. Ricord.

[It is of considerable importance as to what preparations of mercury we are to use in the treatment of the secondary or tertiary forms of syphilis. Those preparations act most rapidly as mercurials the nearer they approach to the crude state; but contrary to Mr. Acton and Sir B. Brodie, M. Ricord thinks these are to be avoided, and the most valuable form is that, the action of which holds a medium place between those forms approaching the crude state and the more soluble compounds. M. Ricord prefers the proto-iodide; it does not too rapidly salivate, nor produce a local caustic action; occasionally it may occasion diarrhœa, which will cease if it be withdrawn. It is never attended with the gastric symptoms, following the use of the bichloride. M Ricord observes:]

We prefer, generally speaking, the proto-iodide of mercury. Although a mild preparation, some persons cannot take the smallest dose alone without being seized with diarrhœa. When this unfavourable predisposition

exists, a more or less considerable quantity of opium must be added. Opium is an excellent corrector, and is the substance specially indicated in all cases in which mercury acts too rapidly or too locally on the digestive tube. Some authors have asserted that opium is an impediment to the specific action of mercury, a statement which we believe to be clinically untrue. So little is this the case, that their joint administration gives rise to the disappearance of syphilitic symptoms, even more rapidly than that of mercury alone, because the opium enables the mercury to be borne, and to exercise its specific influence. There is an enormous difference between mercury given alone, and acting as a purgative, or giving rise to intestinal salivation, and mercury given with that dose of opium which insures its being tolerated.

With some patients, instead of occasioning diarrhœa, mercury gives rise to constipation, concentrating the intestinal vitality on the superior portion of the digestive canal. If the mercurial preparation contains opium, as is generally the case with our formulæ, we suppress it lest the action of the mercury should fly to the mouth, and occasion salivation. Should the constipation still persist, a slight laxative ought to be given.

Antiphlogistic treatment has been lauded, as a means of assisting the action of a mercurial treatment, or even of replacing its specific action. Such a doctrine can only lead to deplorable results. Syphilis, in poisoning the economy, exercises its deleterious influence on the blood, the composition of which it modifies, reducing the number of the globules. This is now an undeniable fact. Bleeding acts precisely in the same way, by diminishing the globules, whereas one of the most important conditions for the due efficacy of treatment is, that it should not produce the same lesions as the disease. There is, however, now no difference of opinion on the subject; it is generally admitted, that unless there be an absolute necessity, owing to the presence of accidental phlegmasiæ, bleeding ought to be severely proscribed in the treatment of constitutional syphilis.

What ought to be the regimen of patients undergoing a mercurial treatment? The same reasoning applies here as in the treatment of primary accidents. During the treatment of constitutional syphilis, all stimulants should be avoided, solid as well as fluid. The diet ought to be simple, and modified according to the general state of health of the individual. Generally speaking, however, the diet of patients labouring under constitutional syphilis ought to be rather strengthening than debilitating. Syphilis weakens, deteriorates, and destroys the organization. A mild, strengthening regimen, therefore, as a general rule, must be the basis of our treatment. In these diseases, other hygienic conditions, such as residence, &c., should not be overlooked. The rules laid down for the general treatment of scorbutic and scrofulous patients apply equally to that of the syphilitic: cold and damp are equally prejudicial to them. They should neither expose themselves unnecessarily to the influence of these depressing causes, nor should they remain closed up in a room, protected from the influence of the air. *Lancet, Jan* 10, 1846 *p.* 31.

[Those remedies which have ranked so high, such as sarsaparilla guaiacum, squina, and sassafras, M. Ricord considers possess no antisyphilitic properties at all. He considers sarsaparilla as one of the most fallacious antisyphilitic remedies, and when, in his practice, he wishes to suspend the treatment of a patient for a few days, he gives the decoction of sarsaparilla without the disease being influenced in the slightest degree. He adds,]

The preparations of gold have been, and are still thought, by some practitioners, to possess great efficacy in the treatment of secondary syphilis. The experiments of Cullerier and Bielt, however, prove that they have little or no influence over the diseases of which we are treating. In the great majority of cases in which they are administered, they exercise no influence whatever on the disease, and in the very few instances in which they appear to dispel the morbid symptoms, it is difficult to say whether it

is the treatment or nature that has produced this result, for we must not forget that the phenomena of secondary syphilis may disappear without any treatment being had recourse to. Preparations of silver have, likewise, been employed with the same want of success in the majority of cases, and the same uncertainty as to their real value in the very few in which the symptoms give way whilst they are being administered.

Does the iodide of potassium succeed in the treatment of secondary syphilis? It has been proved that it may sometimes produce rather favourable results. When Wallace published his first facts relative to the use of the iodide of potassium in syphilis, he employed the salt in all the periods of the disease, against all its forms and all its symptoms. He often obtained favourable results, but in some periods of syphilis, they were so variable that this precious medicine, would, no doubt, have fallen into oblivion, if Wallace had been entirely believed. I have contributed my share towards establishing the reputation which the iodide of potassium now enjoys. I was the first to point out when it ought to be employed, and against the symptoms of which period of the syphilis. I have demonstrated, in the most positive manner, that the iodide of potassium is a remedy which cannot at all be depended upon in the treatment of secondary symptoms; indeed, it seldom succeeds in dissipating them. It nearly always fails, and is as weak as mercury is strong. Moreover, it sometimes increases, exasperates the morbid phenomena, and when it is not noxious it causes us to lose valua ble time. I do not assert that it has never succeeded, but that it cannot constitute a special and complete treatment.

Hydro-therapia (the water cure) has been praised in the most enthusiastic manner. I have tried it, and repeatedly seen the second phenomena disappear under its influence; but this treatment is of all the most momentary, the most fugitive. In a very short time the morbid phenomena again appear. The most useful therapeutic agent is that which overpowers, keeps at bay the longest, the syphilitic diathesis, and which prevents its reappearing the longest, and that mercury does. *Lancet, Jan.* 17, 1846, *p.* 65.

Tertiary symptoms may be said to be essentially characterized by not being transmissible hereditarily. When syphilis has arrived at this stage, it seems to lose its specific character, and to constitute a cachexia, having a certain affinity to scrofula. I believe it, indeed, to be the most frequent cause of that malady. The constitution is deeply modified after passing through the different stages which intervene between the first manifestation of the primary sore and that of tertiary disease. The affiliation cannot always be traced, although, no doubt, it always exists. The secondary symptoms may not have been perceived, or may have been forgotten. Thus, when transmitted by heredity, secondary symptoms appear, within five or six months after birth, and subsequently disappear, whether treated or not. They may not be recognised by the parents; and yet tertiary symptoms supervening, the latter may appear to occur primarily.

Mercury may prevent the manifestation of tertiary symptoms, or modify them when they have appeared; but because it does not always prevent their occurrence, we are not warranted in concluding that it causes them, or that they are the result of the combined influence of mercury and syphilis, as has been asserted by many pathologists. They have been repeatedly observed on persons who have never undergone mercurial treatment—a fact which decides the question. It is generally believed that tertiary symptoms are more serious and more difficult to cure in patients who have taken mercury than in those who have not; and among the former, more difficult to overcome the greater the amount of mercury taken. The explanation of the fact may be easily given. The disease is most difficult to cure in such persons because they are precisely those on whose economy syphilis has the firmest hold, and who have been, consequently, all along, the most rebellious to the action of mercury.

Tertiary symptoms are more serious than secondary, for the older sy-

philis is, the more formidable it becomes, and the more firmly does it establish itself in the economy which it deteriorates. Mercury, when it is not the most precious and the most efficacious of medicines, is a dangerous remedy, often, indeed, a violent poison. When it does not cure, it does not remain innocuous; on the contrary, it injures and debilitates the constitution. Now, syphilis is the more formidable, the weaker the constitution on which it acts. In this sense, the abuse of mercurial preparations may be followed by deplorable results, as it places the patient in the most deplorable circumstances for the development of tertiary phenomena. But, although, in diminishing the quantity of fibrine in the blood, which mercury does, you weaken the constitution, you cannot by such means alone, produce tertiary symptoms, with their peculiar characteristics. The caries which may be occasioned by carrying mercurial stomatitis to its last limits cannot be confounded with the caries of tertiary syphilis. Between the one and the other, there is the greatest possible difference.

Tertiary syphilitical symptoms rarely manifest themselves within six months of the primary infection; this is the inferior limit. As to the superior one, the longest term after which they may appear it is impossible to fix. No tertiary symptoms have been known to occur, ten, fifteen, or twenty years after infection, or even after a still longer period. It rarely happens, however, when the interval is so lengthened, that the patient has not experienced some intermediate symptom. There has, nearly always, been a thorn somewhere, some local ailment, notwithstanding that the general health has been excellent. Suddenly, a tibia becomes painful, a testicle swells or melts, or an exostosis appears. A syphilitical exostosis has, however, never been known to develop itself eight, ten, or fifteen days after the manifestation of a chancre. In some rare cases, I have seen patients at the third, fourth, or fifth month, present phenomena which occupied a medium position between secondary and tertiary syphilis, and which, subsequently, became evidently tertiary; but they were exceptional cases. Tertiary accidents are principally situated in the subcutaneous or submucous cellular tissue, in the fibrous, osseous, cartilaginous, muscular, or nervous tissues, and in organs in their locality. One of the principal characteristics of tertiary syphilis is its tendency to concentrate itself in the internal organs. *Lancet, Jan.* 31, *p.* 116.

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162.—ON THE REPELLANT TREATMENT OF BUBOES.—By Wm. Hargrave, M.B.

[Any plan for preventing the suppuration of buboes, or, if matter should form, of preventing the formation of sinuses, is worthy of attention. Dr. O'Ferrall has adopted the plan of M. Malapert, which he has somewhat modified, in the hope of preventing suppuration.]

The method pursued by M. Malapert is to apply a small blister about the size of a crown to the most prominent surface of the bubo for twenty-four hours, then carefully raise the cuticle for about the same extent, and to apply a pledget of lint of a corresponding size, well saturated in a solution of bichloride of mercury, in spirits of wine of the strength of a scruple of the salt to one ounce of the spirit, and to retain it in situ from two to four hours by a bandage, after which cold applications, medicated or otherwise, are to be used for some hours. A thin brown eschar is the result of this treatment, which is thrown off in some days, when the tumour will be found dispersed. M. Reynaud has also adopted this treatment for dispersing buboes, not only in the incipient stage, but also when suppuration has been incontrovertibly established.

[The following case shows the advantage of this method of treatment:—The patient, a young man of temperate habits, contracted a gonorrhœa, for which he took, for six weeks, occasional doses of balsam of copaiba: a bubo formed in each groin, the left one was lanced, and the matter evacu-

ated. He was admitted a patient of the Meath Hospital on the 2nd of March. The treatment was as follows:]

March 4th. The cuticle was removed from the blistered surface, and lint steeped in the solution of bichloride of mercury was kept applied to the denuded surface for four hours; afterwards the cold lotion was constantly used. 7th. A poultice was directed for the bubo in the left groin, which presented a superficial slough corresponding in size to the action of the mercurial agent; the right one, which was discharging freely, was dressed with the ung. iod. plumbi. This treatment was continued till the 13th, when the slough was cast off from the left one, and both were then dressed with ung. calam. From the 16th to the 18th attempts were made to contract the extent of the right one by adhesive plaster and the uniting bandage. At this date the surface of the left one was completely healed, but as there was evidence of some fluctuation still in it, a blister the size of a shilling was applied: on the 19th, the mercurial solution, when it was removed, the lotio frigida to be used.

*Dublin Med. Press, April* 29, 1846, *p.* 263.

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163.—OBSERVATIONS ON SYPHILIS, AS CONTRACTED FROM NURSED CHILDREN.—By JOHN C. EGAN, M.D., &c.

[Dr. Egan remarks that whilst it is generally believed that syphilis may be absorbed into the system of a parturient female, so as to affect the fœtus in utero, also there is no doubt that it may be transmitted to a child through the medium of a diseased nurse.]

The only symptom commonly present to point out the syphilitic taint in the new-born infant is a desquamation of the cuticle, a senile expression of countenance, and sometimes, though rarely, the occurrence of a few eruptive blotches; these appearances would, in themselves, however, be insufficient to satisfy us as to the true nature of the complaint; and, therefore, we are naturally led to inquire more particularly into the history of the case before we can form a correct or accurate diagnosis. But, when, on the other hand, the child is born apparently healthy, and continues so for a period varying from ten days to as many weeks, any doubts which we may have previously entertained are, in a great measure, if not altogether dispelled, by the supervention of a train of symptoms which, to the practised eye, are almost pathognomonic of the disease as it presents itself in the infant. Nor is it essential that these characteristic marks should follow any particular order, or observe any certain fixed laws, either as regards priority of appearance or precise condition of the parts affected, or that a number should show themselves in the same subject, in order to decide us as to their syphilitic origin. The snuffling, for example, which is often an early attendant on the disease, is in itself a symptom of sufficient importance to direct our diagnosis, even where no other marks of infection are observable. "There is seldom," remarks Dr. Bird, "any real difficulty in the diagnosis of those cases, when once the practitioner has learned to recognise them. The characteristic snuffling will often enable him to recognise the existence of the disease, even before he has confirmed his opinion by visual examination. The puckered mouth, the position of the very characteristic eruption round the lips and anus, in addition to the peculiar varnished or fissured appearance of the parts from which the scales have faded, will, seldom, if ever, fail to convert a suspicion of the true nature of the disease, into positive certainty.

[Dr. Egan illustrates this subject with the following case, in which a nurse received the virus from a diseased child, and had all the symptoms as if it had been introduced into the system in the usual channel. The patient was married, and the mother of three children. Her husband was a man of irreproachable character. She was admitted into hospital on the 1st of

June, 1844. She became wet nurse to a child seven weeks old, apparently healthy; soon after, an eruption came out on the child's nates and thighs, which continued for some time, when the mouth became sore, and the mucous membrane peeled from the ribs. On examination of the patient, she was found to have an ulceration of the breast, with sloughing of the back of the pharynx. With respect to the child, Dr. Egan says:]

On examination, an ill-defined scaly eruption is visible on the inner part of the thighs and arms of the child; a few spots are interspersed over its body; there are no condylomatous excrescences, or any other affection in the vicinity of the anus or vagina, and the mouth is now perfectly healed. An ulcer, about the size of an ordinary plum-stone, of an irregular form, with uneven and slightly everted edges, situated immediately to the right of the nipple, is seated on the left breast of the nurse, which she states first presented itself a few days after the mouth of the child became affected, and commenced in the form of a fissure, which has been gradually increasing in size to the present time. It is unattended with pain, and none of the neighbouring glands have become enlarged. For the last week she has been complaining of sore throat, an erythematous blush pervades the back of the fauces, but no ulceration is apparent: there is an increased vascularity of the palpebral conjunctiva, with a vitiated secretion from the glands, but the structure of the eye is unimpaired. Inoculated the arm with matter taken from the ulcer; ordered five grains of the iodide of potassium in decoction of sarsaparilla three times a day, the dilute nitrate of mercury ointment to be applied to the palpebræ at bed time, and a lotion of subborate of soda with prepared chalk in equal parts of rectified spirits and water, to be kept to the parts affected. The child to take two grains of hydrargyrum cum creta three times in the twenty-four hours.

June 4th.—Nurse. Throat much improved: ulcer on breast has assumed a healthy appearance; complains of pains in the head and back; medicines repeated. 17th. Has lost all pain; throat well; inflammation has left the conjunctiva, and the lids have ceased to adhere; ulcer on breast decreasing in size; no effect produced by inoculation.

Child. The eruption fading, and its general appearance very much improved. 30th. The ulcer which occupied the breast of the nurse completely healed. No vestige of the eruption is visible on the child, which appears in perfect health. July 5th. They were discharged.

Oct. 19th.—Nurse re-admitted. States that she has not enjoyed good health since her discharge; shortly after leaving the hospital, copper-coloured spots appeared on the arms and thighs; has been recently taking pills, which have induced ptyalism. Her face is now covered with a pustular eruption, which is also very thickly scattered over the buttocks and upper part of the thighs; the orifice of the vagina presents a tuberculated condylomatous appearance. On looking into the throat, a granulated condition of the back of the pharynx is observable, covered by a thin transparent coating of muco-purulent matter; experiences much pain and difficulty in deglutition; has lost all appetite for food; speaks in a low whisper, not, however, amounting to aphonia; complains of pains in the knees, oppression in the chest, and a sense of "great weight," as she expresses it, at the heart, accompanied with palpitations; perspires rather profusely at night, from which she finds considerable relief; chest morbidly clear on percussion; has become very much emaciated since she was last in hospital; pulse 120, small and weak; gums tender, with mercurial fœtor. Child died about six weeks ago, from a protracted diarrhœa. Her throat was touched with the acid nitrate of mercury, and she was again put on the use of the hydriodate of potash, in combination with the compound decoction of sarsaparilla. Under this plan of treatment, combined with nourishing diet, convalescence was slow but steady, the eruption desquamated, she gained flesh rapidly, and the throat was completely healed on the 24th of February, when she was discharged. She had another relapse of the sloughing sore throat for which she was treated in the hospital.

It is a fact worthy of notice, and to which out of many cases I have not met with a single exception, that a nurse may continue to suckle a diseased infant with perfect safety to herself, so long as no abrasion of the cuticle, or ulceration in or about the nipple occurs; but when such take place, she can no longer continue to do so with impunity. The same remark is made by Swediaur, who says: "In all cases of the kind that have come to my knowledge, either the nipples of the nurse were infected by syphilitic ulcers in the mouth of the child, or reciprocally the nipples of the nurse being attacked with ulcers, occasioned ulcers of the same kind in the mouth, nose, and lips of the child, and thus communicated to it a general infection.

[Dr. Egan concludes that mercury is a valuable auxiliary in the cure of syphilis; but that if used with the idea of its effecting a permanent cure, disappointment, he fears, will ensue.]

The preparation which I find most efficacious is the proto-iodide, pushed so far as to induce a mild degree of salivation. If, however, remedies are now laid aside, under the idea that a permanent cure has been effected, a few weeks will, in general, bring a recurrence of the same form of disease, or perhaps other symptoms denoting a latent taint, will be superadded. I, therefore, find it advantageous, before the effects of the mercury have completely worn off, to follow up the treatment by the administration of iodide of potassium, which insures the patient the best chance of recovery. Under any form of treatment, however, relapses will occasionally take place.

*Dublin Quarterly Jour. of Med. Science, May*, 1846, *p.* 334.

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164.—ON STRICTURE.—By Dr. LEROY ETIOLLES.

[On the subject of catheterism Dr. Leroy Etiolles says:]

Surgical works treating of the anatomy of the urethra, rarely fail to state that all the obstacles to catheterism exist at the inferior wall of the urethra, where are united the dilatation of the bulb preceding the sudden contraction of the membranous portion, the projection of the verumontanum, the prostatic dilatation, and the projection of the neck; and the precept, now become trite, is delivered, that the point of the instrument should always follow the upper wall of the canal. * * * * * *

The utility of observing this direction at the point of junction between the bulbous and membranous portions of the urethra cannot be doubted; for there is a difference of height of from four to six millimetres between the one and the other. If the point of the catheter were rested against the bottom of the depression, and force employed to overcome the resistance thus offered, a perforation would be inevitable, and the instrument would pass beneath the membranous portion. Its point must, therefore, be sufficiently raised to avoid the cavity of the bulb; but if, with this object, the upper wall of the urethra is pressed against too firmly, it often happens that the catheter strikes against the sub-pubic ligament, and turns round in the hand of the operator when he attempts to depress the handle.

It must not be forgotten that before reaching this ligament, which surrounds it like a collar, the urethra is abandoned by the corpora cavernosa which have separated, and that it is only strengthened anteriorly by the fibrous band which is inserted into the pubes; so that anterior to the ligament, it possesses a certain laxity which allows it to engage the instrument, and arrest the course of the point, which, after having traversed the portion of the canal surrounded by the corpora cavernosa, passes into the depression formed between them and the sub-pubic ligament. Here false passages are less to be feared than posteriorly, because resisting fibrous sheaths and the pubes arrest the progress of the instrument, but the urethra may at all events become lacerated, and, in fact, often is so. How many times have I, when called to pass an instrument where catheterism had been unsuccessfully tried, been obliged in order to avoid passing it again into

these lacerations, to direct the point of the instrument away from the anterior wall so as to carry it backwards towards the bulb, sliding it afterwards from below upwards, so as to enter the narrow membranous portion. How many times also, finding the anterior wall of the urethra swollen from the contusion produced by the repeated pressure of the catheter against the ligament, have I been compelled to practice the *tour de maitre*, and carry the instrument along the floor of the bulb, bringing it up afterwards behind the swollen part which impeded its entrance to the narrow portion. Thus, this precept must be understood in a qualified manner, and, above all, should not be exaggerated; otherwise it may give rise to difficulties which would have been avoided by being less impressed with its importance.

[Whatever irritates and inflames the urethra may be considered as a cause of stricture—thus gonorrhœa is a most frequent cause. It may also follow the use of strong injections, particularly those made of nitrate of silver. Injections, however, cannot be considered as a frequent cause of stricture, since they seldom pass to the membranous portion of the urethra, where nine-tenths of strictures are located. With respect to the seat of stricture, Dr. Leroy observes that]

1. Nineteen-twentieths of strictures exist at a depth varying from five to six inches (M. Lallemand states it at from sixteen to twenty centimetres), *i. e.*, immediately behind the bulb, at the commencement of the membranous portion, beneath the pubes, where the urethra is naturally narrower. 2. Next, in frequency are strictures of the posterior lip of the fossa navicularis. 3. Those of the meatus. 4. Strictures of the spongy portion, situated two or two and a half inches from the meatus, at the root of the penis, at the point where the canal is naturally somewhat narrow, and where, in a state of flaccidity, the penis is bent upon itself. 5. Various authors have met with stricture of the prostatic portion, and Lallemand has found it extending to the neck of the bladder.

[With respect to treatment, he divides strictures into three classes. 1st. Those which allow both urine and bougie to pass. 2d. Such as allow the urine, but not the finest bougie to traverse them; and 3d. Such as present a complete obstacle to both. He says on the treatment by]

*Dilatation.*—This is performed in three different manners. The catheter may be left in the urethra, and changed but every three or four days—the slow or permanent dilatation: it may be changed every six or seven hours, which forms the continuous, sudden, or, to use a favourite term in medical language, the coup-sur-coup dilatation. Lastly, dilatation may be obtained by the retention of the bougie for a period varying from five minutes to one hour, gradually increasing their calibre in a progressive manner very important to observe, which is the temporary or progressive dilatation. Each of these methods is proper for certain strictures; but it is seldom that we can at once determine which mode is likely to best succeed. We must, therefore, commence with the most simple and the most convenient to the patient, and, in these points of view, temporary dilatation is to be preferred. It does not oblige the patient to abandon his business, or even his pleasures, during treatment, requiring only half an hour's repose daily. It is not painful, and often cures as radically and as promptly as the permanent dilatation. M. Leroy prefers, for the generality of cases, to all others, the gum-elastic bougies, by reason of their simpleness, resistance, and polish, employing the capillary, spiral, conical, or curved one, according to the exigencies of the case.

[In speaking of temporary dilatation, he observes:]

An invariable rule in temporary dilatation is never to employ force in passing the bougie, introducing one at first which passes freely or enters with but slight effort; and never to increase the size of the bougie from day to day, but at the same sitting, *i. e.*, commencing with that which passed freely the day before. * * * * In the majority of cases the diameter of the bougie may be increased half a millimetre each

seance, which makes about twenty days as the ordinary term of treatment. The following are the steps I usually pursue. In the two first seances one bougie only is introduced and left in a quarter of an hour: in the third, the bougie of the day before is first introduced, and then, after a quarter of an hour, one half a millimetre larger is employed, which in its turn is retained a quarter or half an hour: on the fourth, after the two first bougies have been passed, a third and larger is tried, and so on, increasing half a millimetre daily—taking care to commence with the bougies which entered easily the day before, causing each to be retained from five to ten minutes. Every second, or when the stricture is callous, every third day, the smallest of the series is discontinued, commencing with the second, then with the third, until the largest, of seven and a half or eight millimetres, passes through at once.

When four millimetres are reached, curved bougies pass with less violence than straight ones. * * * * In the great majority of cases the painful sensation following the augmentation of the size of the bougie is relieved in ten or fifteen minutes, and the instrument grasped tightly at first then becomes free in the canal; so that if we did not allow it to remain in longer than five or ten minutes, as advised by some, and if we do not wait for the relaxation which follows the excitement produced by the introduction, we delay the treatment, for it is only after such relaxation the bougie can exert any mechanical effect. The *seances* usually last from thirty to forty minutes, during which two or even three bougies are introduced, and retained from ten to fifteen minutes each. There is infinitely less irritation produced by using two or three bougies at a sitting, than by employing at each a larger one at first than had ever yet been tried. * * * * * This treatment by temporary dilatation, which continues from ten to thirty days, very often produces, notwithstanding this is denied, durable cures: and does so almost constantly, when the stricture is fungiform, vascular, or produced by a thickened mucous membrane. I have had occasion to see patients whom I thus treated in 1826–8, that is, more than fifteen years ago, and the stream of urine in these cases has continued the same size as immediately after treatment, without a single bougie having been introduced since that time.

[He then proceeds to treat of rapid, or coup-sur-coup dilatation.]

By this mode of treatment the catheter is increased in size every eight or ten hours, and the time occupied is but four or five days. This is the plan M. Lallemand now prefers, having abandoned his former predilection for the employment of caustic. Prolonged dilatation, even yet so generally practised, was abandoned by M. Lallemand, in consequence of its injurious effects; but more lately, having observed that cauterization is not applicable to all cases and does not prevent relapse, he sought some new method, and, proceeding by progressive steps, he was induced to adopt the plan of dilating the stricture rapidly, having observed how easily we may pass from one sized instrument to another, and, above all, having proved that the cure is as durable as that produced by any other treatment: so that he was enabled to produce in two or three days results which formerly he could not have hoped for under as many months—preserving also all the advantages of dilatation without its inconveniences.

M. Leroy remarks that, when a regular increase of their size is observed, there is seldom any difficulty in passing the instruments, the first indeed being that which least easily enters. He employs the elastic gum catheter without the stilette, unless there is spasm of the urethra when this is required, in order that some resistance may be offered. He insists upon three rules being observed. 1. To wait before passing the second catheter until the irritation and swelling produced by the first subside, which they usually do in twenty-four or thirty-six hours. If an increase of the size be attempted before this, success is prevented; while, if the passage of the second be delayed, the others may rapidly follow. 2. Suspend the treat-

ment when it produces painful micturition, bloody urine, &c. These symptoms rarely appear before the fifth day, when the treatment is in fact concluded, and they disappear on the removal of the instrument. 3. After a bougie of seven and a half or eight millimetres has been passed and retained in the urethra for twenty-four hours, some days' rest must be given the patient, and then, to assure the treatment, the three last numbers should be passed for half an hour during a week or so.

[*Permanent or slow dilatation.*—Dr. Leroy considers that there are few cases, even of hard strictures, that require this treatment.]

*Cauterization.*—M. Lallemand, formerly one of the chief advocates for the use of caustic, after having rendered its application more simple, easy, and safe, has, nevertheless, renounced its employment in most cases. The first objection to cauterizing the interior of strictures, is the difficulty of limiting the action of the nitrate of silver to the portion of the canal where the obstacle is situated, so that the healthy parts anteriorly or posteriorly may not become affected by it. The next is the tendency to relapse after a longer or shorter period, and the necessity at last of having recourse to dilatation in patients who were regarded as cured by caustic. It does not follow that this method should be entirely rejected, for there are cases in which it cannot be replaced. Thus, when the interior of a stricture is excoriated or ulcerated, or the neighbouring mucous membrane is sensitive or inflamed, the presence of a catheter produces spasms and nervous symptoms which prevent the patient supporting it, and are renewed by any fresh attempts at its introduction. Here cauterization changes the vitality of the parts, leads to the cure of complications, and causes the disappearance of the excessive sensibility.

2. *Treatment of Strictures which allow Urine but not Bougies to pass.*—In these cases there is not retention of urine, and they are to be treated by either the continuous pressure of a bougie or direct cauterization. M. Leroy observes, that the constant retention of an instrument in close contact with the strictured part is difficult, but when it can be accomplished, and he proposes an apparatus for the purpose, the stricture often becomes soft and tractable. Another plan, which does require confinement in bed, is to press the end of the instrument against the obstacle for a quarter or half an hour daily. After each sitting, a small bougie should be attempted to be passed. This plan wants patience, for whole weeks may pass without any apparent progress being made. When a stricture cannot be passed, direct cauterization becomes also a proper mode of treatment, the retrograde being that which is to be put in force in cases where small instruments can be introduced. The application of the nitrate of silver requires, however, the greatest nicety to avoid the getting out of the tract of the urethra.

3. *Treatment of Strictures producing complete retention of Urine.*—Here unnecessary delay endangers life itself; yet, before resorting to more forcible measures, the various descriptions of bougies calculated to pass difficult strictures must be tried, in conjunction with the employment of bleeding, baths, &c. Dr. Leroy has derived no benefit from the application of belladonna in these cases, but he has known tobacco-smoke produce a favourable relaxation. If other means are unavailable, Forced Catheterism must be had recourse to, but the thrusting of large metal instruments through the obstacle, as recommended by Mayer, of Lausanne, is a very dangerous practice, tending, as it does, to produce lacerations. A small catheter is to be pressed rather than forced against the obstacle for the space of an hour. During the first quarter of an hour the pressure is sometimes more advantageously made by means of a conical catheter, substituting a cylindrical one when its point has commenced the penetration. M. Leroy recommends incision of the urethra posterior to the obstacle, only in case of a calculus being there detained, in which case he makes it through the rectum. During twenty years' practice he has had only once to punc-

ture the bladder, and recommends that this should also be accomplished through the rectum.

*External Incision of Strictures.*—M. Leroy, we have seen, in cases of impassable stricture, occasionally opens the urethra posteriorly to the stricture; but M. Lallemand not unfrequently cuts down upon the strictured part itself. He does this when the obstacle to the passage of the urine is situated externally to the mucous membrane, and is constituted by tumours or indurations developed in the spongy tissue, or more superficially. Such nodosities may be found near any part of the canal, and dilatation of the urethra only temporarily repels them, while caustic applied to the urethra is of course hurtful. M. L. finds, by cutting completely through these obstacles, he induces their suppuration (which sometimes occurs naturally), and eventual removal. The canal itself must be penetrated, if this is necessary, to secure a complete division of the nodosity. M. Lallemand practices the same operation under other circumstances. Thus, in a very old case, the stricture was not excessively narrow, but the urine passed only guttatim, and the urethra was so irritable as to bear no instrument whatever to pass, an incision was practised with the best effect. In another case, the stricture consisted of an elastic ring, like caoutchouc, which always resumed its former contracted state the instant the catheter was withdrawn. *Medico-Chirurgical Review, Jan.*, 1846. *p.* 105.

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165.—TREATMENT OF GLEET.—By Dr. L. D'Etiolles.

[The evils resulting from the use of injections in the treatment of gleet, arise from their being too strong; hence, not only failing to act as astringents on the mucous follicles, they cause irritation, inflammation, and even stricture of the canal; this applies more particularly to the nitrate of silver injections. Dr. Leroy remarks that:]

The discharge which strictures give rise to at first proceeds from the phlogosis of the mucous membrane situated posteriorly to them; but sooner or later the whole canal participates in this condition. In most cases this effect disappears after the cure of the stricture, however long it may have been present. Very frequently the urethro-prostatic discharges have been mistaken for spermatorrhœa. Nevertheless, the stagnation of the urine posterior to the stricture gives rise to phlegmasia and dilatation of the ejaculatory canals, whence may result a flux of seminal fluid. Numbers of substances, both of the mineral and vegetable kingdoms, have been employed to arrest these discharges. They operate not only as astringents of the mucous follicles, but also by coagulating the albumen which forms so large a portion of the fluids discharged from the urethra. It is important to observe that the sulphates of copper, of zinc, and of alum, which coagulate the albumen when used in moderate proportions, re dissolve it when employed too strong, and thus may seem to keep up a discharge they first diminished. The nitrate of silver, in small doses, coagulates the albumen; in large ones, it combines with and cauterizes the tissues. Every one knows that nitrate of silver will often suppress these discharges, but it should also be known that, when used to this end, it sometimes induces inflammation and abscess of the prostate. Employed in the large proportions it so often is at present, it often lays the foundation for stricture. Where the nitrate is required, Dr. L. prefers making a slight application of it in substance; but frequently finds this unnecessary by employing the following ointment: kino ten parts, sulph. zinc. one part, lard twenty parts.

*Medico-Chirurgical Review, Jan.*, 1846. *p.* 117.

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166.—REMARKS ON SYPHILIS.—By Abraham Colles, M.D., &c.

*Modes of Administering Mercury.*—Dr. Colles believes inunction to be the

best means of affecting the system. The quantity to be used at one rubbing should be divided into three or four portions and each well rubbed in before another is begun with. The friction should be performed by another person, the patient not being usually competent to the requisite exertion. If the patient cannot remain within doors, mercury must then be exhibited internally, when, however, it is liable to act on the bowels. To prevent this, we must not be in too great a hurry to add opium, as frequently in two or three days the irritation will subside of its own accord, and not return unless the preparation given be changed, or the dose too much increased. Calomel affects the mouth more quickly than other preparations, but is more apt also to act on the bowels if it be not combined with opium. Corrosive sublimate causes the rapid disappearance of some of the secondary symptoms, but the cure effected by it is not radical unless it be followed by some of the other preparations. Under favourable circumstances the mercury should manifest its effects in a week or ten days, and, although there are great differences in this respect, if no effect be produced at the end of a fortnight, the mercury should be stopped for a day or two, the patient purged, and a couple of warm baths given him, when the mouth will frequently become sore, although the mercury has not been re-commenced. If the system resists the mercury we must not endeavour to produce the effect by increasing the quantity given, but examine the condition of the health, and thus, if we find fever existing, as indicated by a dry mouth, we must suspend the drug until this is relieved.

"There is nothing more important to remark than the condition of the gums under the use of mercury, and the degree of salivation produced. The gums may swell and ulcerate, and yet the mercury is disagreeing with the constitution, and doing no service to the disease. If the gums swell, remaining red, however, and a salivation comes on, all is right; but if it causes ulceration of the gums—if the gums are receding from the teeth, and there is no discharge of saliva, mercury is doing no good, but mischief. If you continue to use it without this effect being produced, you must do one of two things—either double the dose of mercury, and by so doing, when you least expect it, throw your patient suddenly into a profuse salivation, which you will not perhaps be enabled to control; or you must retrace your steps, and alter the constitution by attending to the bowels, or doing whatever else seems indicated in the particular case, and when this is done, a proper salivation will often be the consequence, without another particle of medicine being given. * * * * Now, mercury, from peculiarities of constitution, cannot be made to affect the gums of all, and in some of these cases it will affect the throat instead. About the usual period it should be expected to show itself, the patient will experience some uneasy feeling in the throat, and, on your examining it, the soft palate will be found thickened and red, and an ash-coloured slough on one or both of the tonsils. This would spread rapidly if the mercury were rashly pushed without care and attention to the constitution. Although this is a local demonstration of the action of mercury, it is not one on which I should wish to place much reliance as a curative for the venereal disease; you must sometimes, however, be content with it, as no other can be had, and I must admit I have cured the primary disease without other local effect of mercury."

Dr. Colles does not advocate the production of anything beyond a moderate action on the mouth, which however is to be maintained until all induration has disappeared. The endeavour to force mercurialization upon systems which are little susceptible of its influence by means of very large doses, may give rise to a profuse salivation, without the consolation of forwarding the progress of the case. When we are aware of this peculiarity in a case, we should commence treating it by small doses. The chancre is sometimes healing under the mercury, when the treatment being impatiently urged on, the sore puts on a fungous or spreading character, when all

mercury must be discontinued. When fever is developed during a mercurial course, too, the drug must be discontinued. If, after the mouth has began to be affected, the patient neglects himself, and allows the effect to subside, much more mercury will be necessary to reproduce it than was at first requisite to induce salivation.

*Bubo.*—It has been said that, if a chancre is healed up suddenly, a bubo will be caused; but, in truth, this results from the too sudden and violent effect of the mercury upon the constitution, and furnishes an additional reason for the cautious employment of the drug. In proof of this, when the chancre is not doing so well and a bubo is threatening to form, if the mercury be suspended for a day or two, and a purgative given, the sore will recover its healthy appearance, the bubo diminish, and the patient perhaps recover without requiring any additional mercury. But a case may present itself in which no mercury has been used, and in which chancre and bubo are both present, and for this, mercury is the proper remedy, which must be employed even though the bubo threatens to suppurate, and may seem at first to be the worse for it. When, however, a bubo continues to get worse under the use of mercury, and induces fever, the medicine must be suspended. It is of very little consequence whether a bubo, which has began to point, is allowed to burst or is opened by a lancet; but we must at all events never meddle with one that is hard and unripe. A bubo occurring in a person of weak, lax habit, or in deranged health, and which remains indolent and flat, the skin over it being of a bluish or purple colour, requires to be opened by a large incision completely traversing this diseased skin. There is no advantage derivable from opening any description of bubo by means of caustic. When a bubo that has been opened forms painful fistulous canals towards the scrotum, mercury, which has been given in excess, must be suspended, the cavity of the ulcer stuffed with red precipitate, over which a pledget of tow is firmly bandaged, and measures taken which may contribute to the improvement of the general health. No benefit attends the division of these fistulæ.

*Venereal Eruptions.*—"You do not observe in syphilitic eruptions what is seen in other eruptions to which they have been thought somewhat analogous—namely, that the whole of the eruption comes out at once, that is, within a few hours. In the syphilitic, you may see it declining in one part and appearing in another at the same time; you very often have an opportunity of observing it in several stages of its progress at any time during the first month, until it all at last fades away, at no determinate period from its first appearance. Sometimes the eruption is extensively spread over the surface of the body, but at others it is confined to one region, or even to a spot you might cover with your hand. You might, perhaps, suppose that the more of the eruption that appeared the more mercury should be required for its removal—but, I think, the very reverse is the case. I think where the eruption comes out fully and fairly, it yields more quickly and completely than where you have only a few spots here and there. Some suppose there is great advantage gained by treating these eruptions early with mercury; but I am far from an unconditional acquiescence in this notion. I think you may begin to prescribe mercury too soon, and for this reason: the eruption is ushered in with fever, and among many individuals in this state, you will see every degree of severity in the symptoms of this fever, from the most trifling to the most intense; but whether mild or severe, your first duty is to remove the fever; for, if you give mercury during the eruptive fever, you will not do the eruption one bit of good, but will probably do the patient a mischief."

Mercury in large doses does much harm in these syphilitic eruptions; and Dr. Colles states, that they are cured with great rapidity by rubbing in from ten to twenty grains of ung. hyd., or giving from three to five grains of pil. hyd. every night, either alone or with tonics, or mild diaphoretics. The *scaly* eruptions fade quickest under this treatment, then the papular, and

the copper-coloured blotch. Rupia will, however, not tolerate the employment of mercury; and the pustular eruptions require it to be used in the most cautious manner. In cases where the mercury acts beneficially, it should be continued for at least six weeks, or the eruption will be re-produced, although in a more manageable form. When an eruption is situated in the face, the disfigurement may be most speedily removed by giving corrosive sublimate; but the treatment must be finished by friction or blue pill, or some other secondary symptom will follow.

*Syphilis combined with Scrofula.*—Dr. Colles has many interesting observations upon the modification which a scrofulous condition of the system impresses upon syphilis, and by no means agrees with those who prohibit the employment of mercury under such circumstances—having indeed seen some of the worst results spring from the non-mercurial treatment in these cases. He says,

"So far am I from being afraid of inducing salivation in those complicated cases, that I am on the contrary desirous to bring it on quickly—much more so than I would be eager to do in a common case, and by the practice I have witnessed the most beneficial results. I am not at all disposed to deny that if mercury, when given in these cases, should not exhibit itself in the proper manner in the gums and salivary glands, that it may and probably will exasperate the superinduced scrofulous affection; but from what I have endeavoured to impress upon you concerning the salutary action of this drug in any case where salivation may be necessary, you may readily understand that our present case is but another example of a general rule, and not an exception to that rule, as many seem to consider it. What I do then in instances where the glands of the neck become affected through the venereal stimulus is, when I do not see the mercurial ointment or blue-pill affect the mouth quickly, I order calomel, with or without opium, to be added to the other form, and when the gums become touched, and some pytalism produced, the secondary venereal symptoms rapidly recede, the swollen glands grow smaller, and if one of them has opened into an ulcer it takes on a healing disposition, and frequently cicatrizes by the time we judge enough of the medicine has been given to cure the venereal affection."

The preceding observations are applied especially to the case where the glandular affections are excited by the secondary venereal symptoms; but wherever the patient is under the full scrofulous action when he contracts the syphilis, there is no reason why full mercurial action should not be induced, and the syphilitic symptoms will yield as readily in this case as in a less complex one. So, too, even in patients threatened with phthisis, mercury must be cautiously given when they become the subjects of syphilis, provided that the case has not gone so far as to produce even slight hectic, when mercury will do harm.

*Secondary Venereal Ulcers.*—These, like primary ones, will sometimes heal before the constitution has been sufficiently impregnated with mercury, and if this be left off too soon, or irregularly administered, numerous and harassing relapses are sure to occur for months, or even years. Not only may the practitioner be deceived by the sore thus healing too speedily, but also by its seeming at first to get worse instead of better under the use of the drug. A feverish state of the system, or other causes of general disturbance may give rise to this, and yet, when the mercury is cautiously, but effectively continued, all is found to go on well. It requires, sometimes, great courage to persevere, in spite of apparent contradictions, but nothing is so mischievous in these cases as timid half-measures. It is not at the beginning of a mercurial course that we must stop the treatment on the first unfavourable appearance occurring, for this may arise from causes independent of the specific action of the medicine. If, however, after full action is established, a change for the worse occurs, it must be at once suspended.

[Modern practice proves iodide of potassium in full doses, to answer best in the treatment of secondary eruptions. Primary symptoms of syphilis, however, should not be attempted to be removed without the use of mercury.]
*Medico-Chirurgical Review, Jan.*, 1845, *p.* 231.

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167.—ON INJECTIONS OF COPAIBA AND CUBEBS IN GONORRHŒA, &c.—By THOMAS CATTELL, M.D., Braunstun.

[It is frequently the case that in treating gonorrhœa by copaiba and cubebs gastric and nephritic irritation is produced, and their use is obliged to be discontinued. Dr. Cattell has succeeded in forming an aqueous impregnation of these substances which answers very well in the treatment of gonorrhœa, &c. He says]

These processes pharmaceutically embrace the constitution of an aqua copaibæ and cubebæ. They are as follow :—

I. Distilled water of copaiba and cubebs.—℞. Ol. copaibæ (or cubebs), two ounces; water, five gallons and a half. Draw over from three to four gallons.

II. Extemporaneous water of copaiba and cubebs.—1. ℞. Ol. copaibæ (or cubebs), two ounces; magnesiæ carb., six drachms. Rub together, and add four gallons or less of water. Filter. 2. ℞. Ol. copaibæ (or cubebs), as in the preceding; but use pulverized pumice-stone, sand and bath-brick, in the place of the magnesiæ carb.

III. Saccharised caustic solution of the oils of copaiba and cubebs.—℞. Ol. copaibæ (or cubebs), one drachm; caustic potash (or soda), half an ounce; white sugar, six drachms. Twenty-four ounces of water to be added gradually.

IV. Saponiform solution of the respective oils.—℞. Ol. copaibæ (or cubebs), two ounces; caustic solution of potash (or soda), one ounce. Rub together in a mortar, and add water as may be required.

As it is relevant to the present subject, it may not be amiss here to state, that I have applied the same chemical formula, with but trifling variation, in producing an aqueous impregnation of the oils of turpentine, ergot of rye, creosote, &c., and used them in the treatment of uterine hæmorrhage, and inaction of the uterus during parturition with the utmost success. In one case of uterine hæmorrhage, occurring subsequently to delivery, I employed the aqueous solution of the oil of ergot three times during two hours, when the cessation of the sanguineous discharge clearly indicated the absence of any further danger. In two or three cases of dormant action of the uterus during parturition, I employed the injection of ergot with immediate effect. I have, notwithstanding, proceeded in these cases with extreme caution, from the supposed influence of ergot in producing, when taken internally, fatal results to the fœtus in utero. *Lancet, Dec.* 6, 1845, *p.* 611.

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168.—INJECTION OF COPAIBA IN GONORRHŒA.

[M. Ricord gives the case of a man who had contracted gonorrhœa, which was rendered peculiar from the circumstance of there being a fistulous opening from the urethra, about half way down the penis; the gonorrhœal discharge escaped from this opening, as well as from the orifice of the urethra. Under treatment with copaiba, that part of the urethra between the fistulous opening and the bladder became healthy, while the urethra, anterior to the opening, continued to secrete matter. The copaiba was continued, and the urine injected up the urethra from its orifice: he soon got quite well. M. Ricord remarks that,]

This case shows very clearly the modus operandi of the balsam of copaiba in gonorrhœa to be, by impregnating the urine with its principles, and being so applied to the inflamed membrane, and not by being in any other way

determined to the part. This is further shown in similar affections in the female, where the urethra is more implicated than the vagina; it also points out the use of injections of copaiba in gonorrhœa; and, although they have been tried with partial success, it is by no means a general way of using the remedy. If, however, a formula could be found, in which it could be so combined and modified as to be eliminated with the urine, all the advantages of the medicine might probably be secured. There is no doubt copaiba is the most powerful resource we possess in gonorrhœa, and where it does not succeed, it is generally from its nauseating the stomach to such an extent as to be inadmissible, or otherwise deranging the system; and, could it be used in an appropriate form as an injection, the patient might be spared the disgust and unpleasantness consequent on a course of this nauseous drug.—*London Medical Gazette. Aug.* 22, 1845.

*Monthly Journal of Med. Science, Feb.*, 1846, *p.* 155.

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169.—TREATMENT OF CHORDEE.

[A case is recorded in the Lancet for December 20, 1845, of a case of chordee, successfully treated by colchicum. The patient was a young man, twenty-one years of age, of sedentary habits, who contracted a gonorrhœa, which yielded in a few days to ordinary treatment. He had, however, painful erections at night, for which twenty-five minims of vin. sem. colchici were administered for four successive nights, when he was quite cured of this unpleasant affection. The same practitioner employed it in several other cases with the like success. This plan is not at all new, as Mr. O'Connor refers us to the fact of Sir B. Brodie, in his lectures during the session 1838–9, advised its use; and it is but due to the memory of Sir Henry Halford to state, that he recommended colchicum in "gout of the urethra." It has often been given in doses of even sixty minims and more with the most favourable result.]

*Lancet, Dec. 20th and 27th*, 1345, *p.* 687 *and* 710.

[The following prescription is recommended by Mr. Gillott in a communication in the Lancet for December 20th, 1845, for the cure of gonorrhœal rheumatism: colchicum wine, two drachms; sulphate of magnesia, one drachm; carbonate of magnesia, one drachm; iodide of potass, half a drachm; water, five ounces and a half. One teaspoonful to be taken every fourth hour. Another correspondent of the Lancet recommends a combination of iodide of potass and decoct. sarsæ comp.]

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170.—INCONTINENCE OF URINE CONSEQUENT TO STRICTURE.—By W. Lawrence, Esq., F.R.S., &c.

[Mr. Lawrence mentions a case that was under treatment a few years since in St. Bartholomew's Hospital for incontinence of urine, the result of stricture of the urethra; in its treatment the lancetted stilette was used—the patient was about fifty years of age, the abdomen enormously enlarged, quite as much as that of a female in the last month of pregnancy. Mr. Lawrence observes,]

There was a firm unyielding stricture behind the bulb, through which no instrument had passed for several years. After repeated ineffectual trials of various instruments I determined to employ that of Mr. Stafford. On the first occasion, after protruding the lancet to its full extent, the instrument passed on half an inch, and there was but little bleeding. Two days after the instrument was again employed, and the lancet freely protruded; it now passed on through the contracted portion. I withdrew it, and introducing into the bladder with ease a catheter (No. 9), drew off between 70

and 80 ounces of urine. It was necessary to use the catheter daily; the bladder gradually regained its contractile power, and the patient left the hospital at the end of three or four weeks, considering himself well. As we saw nothing more of him, the relief was probably permanent.

[He describes another case in which Mr. Stafford's instrument was used. On his admission, the abdomen was very much enlarged, there was constant micturition with pain in the bladder and loins.]

Various instruments were tried, but none could be carried through the stricture, which was situated behind the bulb; I therefore introduced the lancetted stilette, and pressing it strongly against the stricture, entered the urethra to the length of seven inches, when profuse bleeding ensued, and I withdrew it. The bleeding ceased in a short time on the application of cold. Castor oil was administered, and, after a free evacuation of the bowels on the following morning, a large quantity of urine was passed, the distended bladder being much reduced in size, but not entirely emptied. The bladder became distended as before, and the incontinence continued. A week after the use of Mr. Stafford's instrument, a small catheter (No. 3) being introduced into the bladder, 40 ounces of clear urine were drawn off. The catheter was now daily introduced, and the size gradually increased; the quantity of urine drawn off slowly diminished, and the patient was occasionally able to make water in a small stream.

[In two months after the operation, and by means of repeated introductions of the catheter, he was discharged—he could pass the urine in a good stream and retain it with ease. Mr. Lawrence makes the following observations on this important subject:]

Incontinence of urine, various in kind and degree, is not an unfrequent accompaniment of stricture, although the primary and obvious effect of the disease is to obstruct the flow of water. Inflammation of the mucous membrane of the bladder, caused by stricture, may render the organ so irritable that it will not bear distension. The desire to make water recurs frequently, and so urgently, that if it is not gratified the fluid escapes involuntarily. In a case of bad stricture, powerful exertions, both of the bladder and the respiratory muscles, are required to empty the bladder. When these efforts cease, the urethra remains full of water behind the stricture, where it is probably dilated, and the patient is incommoded by the gradual escape of this portion of urine after he supposes that he is done making water.

A more serious kind of incontinence occurs when the bladder empties itself imperfectly, and thus becomes distended to a greater or less degree. We have here the apparently opposite conditions of retention, at least partial, and incontinence. When the bladder is moderately distended, the muscular coat gradually increases in thickness, and the expulsive effort is more powerful. The neck of the bladder, which in the normal state is closed so as to limit the collection of water in front, gives way to the powerful exertion of the hypertrophied muscular coat, and remains permanently open, so that the urethra is constantly full behind the stricture. If, under the serious impediment of a bad stricture, the bladder should become enlarged to the capacity which it attained in the two cases now related, it becomes incapable of contraction. The mere distension, however, produces the same effect as the powerful action of the muscular coat does in the other instance, that of keeping the neck open, and the urethra filled with water behind the stricture. In this state of things the action of the respiratory muscles, in the usual motions of the body, or their regular contractions in normal respiration, and still more any irregular or more considerable exertion in either of these ways, will force out the urine through the stricture. It must be very obvious that the great annoyance of incontinence of urine, under these circumstances, can only be remedied by relieving or curing the stricture, and thus preventing the accumulation of the fluid in the bladder. When this object cannot be accomplished by the safer means of bougies

or catheters, the lancetted stilette may sometimes be resorted to with advantage. It is a dangerous instrument, and must be used with great caution; but it will sometimes afford more speedy and effectual relief than can be attained in any other way.

[In a case of retention of urine, which lately occurred in our own practice, we succeeded admirably in restoring the tone of the bladder by doses of secale cornutum. The patient, Mr. John Smith, of Wortley, æt. sixty-nine, after a long walk, found himself unable to empty his bladder, and applied to a neighbouring empiric, who suffered the urine to collect for two days without being aware of the case. The consequence was that the bladder could not be emptied, and the catheter was introduced two or three times a day for a considerable period. We at last gave two scruples of ergot of rye well infused in hot water, twice a-day, an hour or two before the time when the urine usually had collected so as to distend the viscus. In a very few days this took effect, and the bladder, at the date of this note, has nearly recovered its tone.] *Med. Gaz., Dec. 5, 1845, p. 1357.*

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## DISEASES OF THE SKIN.

171.—ON SOME LOCAL FORMS OF CHRONIC ECZEMA.—By J. Erichsen, Esq., F.R.S., &c.

[Chronic eczema assumes different forms as it attacks different parts of the body, as the scalp, face, ears, tongue, anus, &c. Chronic eczema of the face usually is of an impetiginous character; it is generally met with in children, rarely in adults, and when it does occur in the latter, it is in consequence of extension from the scalp.

*Chronic Eczema of the Face.*—Mr. Erichsen mentions the case of a ladies' maid, who caught cold whilst travelling outside of the carriage; her face became stiff and inflamed, and pimples with watery heads came out on the forehead and cheeks. The disease continued for three months, without interruption, in spite of treatment, when she was admitted, January 27th, under Mr. Erichsen's care, into the Westminster Hospital. On her admission,]

The skin of the greater part of the forehead, and of the upper part of one cheek, now presents a dry and glazed appearance, and is of a vivid red colour; it is covered by a number of thin curling furfuraceous scales, of a whitish or greyish colour, is slightly chapped in the direction of the natural wrinkles of the skin, and is occasionally bedewed with a watery exhalation. Vesicles no longer form, as in the first instance, on the parts on which the disease is most active, but they occasionally make their appearance about the circumference of the patch, where they present the true eczematous character. The affected parts feel very tense, smart, and tingle much, more especially after exertion, during cold weather, or if exposed to sudden changes of temperature. As it was of considerable importance to the patient to be cured as speedily as possible, as she had already been subjected to much treatment without deriving any benefit, and as there was no circumstance to contra-indicate it, it was determined to have recourse to arsenic. I accordingly commenced by ordering three drops of the liquor arsenicalis three times a day, and directed that the affected parts should be preserved day and night from the action of the atmosphere, by covering them up with lint spread well with zinc ointment.

Feb. 13.—Much better. The skin is softer, not so glazed, and the feeling of tension is less. The liquor arsenicalis was now increased to four minims for a dose, and the Unguent. Hydrarg. Precipitat. Albi was substituted for the zinc ointment, it being thought that a slight stimulant might be of service.

[In consequence of febrile symptoms arising, the arsenic was omitted

for six days, when it was again resumed, and on the 25th of March, the disease was perfectly cured. Mr. E. mentions another case, a gentleman, thirty-four years of age, who had laboured under eczematous eruption of the face from childhood.]

The cheeks, lips, and skin were, when I saw him, covered with thin, peeling, furfuraceous scales, of a whitish-grey colour; but, occasionally, under the influence of any cause of irritation, they become the seat of a watery exudation, which, on drying, formed thicker and more laminated incrustations, adding greatly to the distress and discomfort. He likewise suffers occasionally from an attack of eczema about the extremities, especially on the fore-arms. The patient was ordered to apply the Unguent, Hydrarg. Precipitat. Albi to the affected parts every night, to take five grains of Plummer's pill every second night, effervescing saline draughts twice a day, in order to allay the irritability of the stomach, and as soon as this was accomplished, was put on a course of the Harrogate waters.

[This case quite recovered. When the disease depends on irritation of the skin and mucous surfaces, it can be soonest relieved by carefully regulating the diet, avoiding all stimuli, and using one of the most efficient remedies that we possess in affections of this class—the Harrogate waters. Where the temperament of the patient is irritable, arsenic, cantharides, &c. would decidedly aggravate the disease. Chronic eczema of the ears, which usually proceeds by extension from the scalp, is a very painful as well as obstinate affection. Mr. Erichsen observes that:]

The ears, when attacked by the eczema, become exceedingly red, tense, hot, and shining: a number of small vesicles then appear, which contain a clear transparent serum, of a reddish or pale yellow colour; when these give way, the fluid that is effused forms thin scabs or scales, which are usually cracked in all directions, and which are frequently curled up or project from the surface of the skin. If the disease continue, the pinna attains a very large size, becoming hypertrophied, and often fissured; sometimes, indeed, the swelling goes on to such an extent as to block up the external meatus, giving rise to temporary deafness.

[When it occurs in young children, it can easily be cured: it is generally in females from fifteen to twenty-five, or in women about the change of life, where it proves so obstinate. It is generally associated with irregular menstruation, as may be noticed from the fact, that it is aggravated at those periods when the uterus ought to act. Mr. E. describes a case which came under his care, a female, twenty-one years of age; menstruation was irregular.]

Both ears were found, on examination, to be affected nearly to an equal degree. They were red, glazed, much swollen, and chapped, covered with thin, flimsy, scaly incrustations, from under which a serous fluid occasionally oozes, and are very hot and tense. The integuments of the mastoid, temporal and parotidean regions are likewise involved, being inflamed and covered with thin furfuraceous laminæ.

She was ordered to apply bread-and-water poultices to the ears every night, to cover them up in rags spread with zinc ointment during the day; to take ten grains of the pil. aloes c. myrrha every second night at bedtime, to abstain from all stimulants, and to adhere as strictly as possible to a milk diet. The ordinary means, such as mustard-and-water to the feet, &c., were likewise directed to be adopted for re-establishing the menstrual function, and were attended with success in the course of a week. At the end of a fortnight she was much better, the ears were less tense, and not so red or swollen. She was now ordered to apply an ointment composed of equal parts of the ceratum plumbi comp. and zinc ointment, and to take five minims of tincture of cantharides, and thirty of liquor potassæ twice a-day. This plan of treatment was continued until the end of April, when she was perfectly cured, the ears presenting their normal appearance, and *having lost* entirely their hypertrophied condition. The treatment of chronic

eczema of the ears occurring in the adult is to be conducted on the same principles that guide us in the treatment of this disease occurring in other parts of the body. Any irritation that may exist must be subdued by means of poultices and fomentations; if necessary, a few leeches might be applied. The zinc ointment, or the unguent, or ceratum plumbi comp. or the ceratum cretæ comp. diluted with the elder flower ointment, will be found the most eligible applications when a very mild astringent is required.

The general treatment must be conducted in reference to the condition of the system. If there be any disorder of the digestive organs, or uterus, that must first of all be remedied. If none exist, or after its removal, it will be necessary to have recourse to those means that are generally found to succeed in cases of chronic eczema, such as the dilute nitric, or nitro-muriatic acids, the tincture of cantharides (especially when there is amenorrhœa), either alone or in combination with the liquor potassæ, or the arsenical solution. Owing to the very rebellious nature of the form of eczema now under consideration, it will often be necessary to have recourse to the last-named remedy, which will, if properly administered, and with those precautions that I formerly pointed out, most generally succeed. I have at present under my care a case of chronic eczema of the ears of the kind just described, which, after resisting all other remedies, is rapidly yielding to the administration of Fowler's solution. Many writers recommend the employment of lint to keep the meatus auditorius externus open; this I do not think is ever necessary, any obstruction that may have been occasioned by the swelling of these parts subsiding as the disease is cured, and no chance of permanent occlusion ever existing.

*Med. Gaz., Jan.* 2. 1846, *p.* 14.

*Eczema of the Scrotum, Penis, and Anus*—Eczema of the scrotum and of the inside of the thighs of young children is of a more active character, and is by no means so troublesome as that which occurs in more advanced life. In many cases it appears to be owing to the urine being allowed to dribble over the thin and delicate skin of these parts.

The appearance presented by chronic eczema of these parts in children is very remarkable. The scrotum and integuments covering the pubes, the inside of the thighs and penis, are of a vivid red color, inflamed and oozing; occasionally covered with soft, moist, greyish, or yellowish scabs, from under and between which a serous fluid exudes in tolerable abundance. At other times they are dry, glazed, and chapped in all directions, being merely covered here and there with thin flimsy scales. These two conditions, the moist and the dry, alternate with one another, being evidences of the greater or less activity of the disease. The parts affected are sometimes bounded by a very abrupt line, and there is always a degree of intertrigo and excoriation from friction between the fold of the thigh and the scrotum. There is also much itching, and considerable distress is occasioned by the occasional dribbling of a few drops of urine down the inflamed surface, when the child makes water. The gait of a child afflicted with this disease is usually "straddling," the legs being kept asunder, and there is much pain and inconvenience in walking. Exacerbations of the disease taking place from time to time, the vesicular element becomes manifest in the neighbourhood of the affected parts.

When eczema of the scrotum occurs in more advanced life, especially in old men, amongst whom it is by no means uncommon, it is peculiarly obstinate and annoying; the more so as it is not unfrequently accompanied by a pruriginous affection, which very frequently extends to the anus.

When occurring in individuals past the middle period of life, eczema attacking the scrotum usually presents the ordinary characters of that disease in its chronic furfuraceous or squamous condition. The scrotum is much wrinkled, red, dry, rough, and glazed, or covered with thin, peeling, curled, laminated, and dry furfuraceous incrustations of a whitish or greyish colour, which rub off in considerable abundance, exposing cracks and fissures,

from which a thin, ichorous, or bloody discharge, oozes. The itching, which is intolerable, and is more complained of than anything else, is much aggravated by any excess in diet, or when the patient is warm in bed. Every now and then, under the influence of some exciting cause, the disease assumes a more active condition, revealing its vesicular elementary character, and thus enabling it to be readily distinguished from prurigo of the region affected. Eczema involving the anus is always a most troublesome affection. It may be either an extension of the disease from the scrotum and perineum, or it may be confined exclusively to the anus and lower part of the rectum. It is occasionally seen in young children accompanied by intertrigo, or in consequence of the extension of the disease from the neighbouring parts, when occurring in adults. It is characterised by occasional vesicular eruption, excoriation, fissures, and chaps, which bleed, and are excessively painful on the passage of the fæces, more particularly if these be hard or lumpy. There is always excessive pruritus; more especially, when the patient is warm in bed, or after standing for any length of time.

Eczema of the anus is more commonly a disease of individuals who have passed the middle period of life, and is not uncommonly connected with piles.

[This affection occasionally occurs in young subjects, and Mr. Erichson mentions a case of a boy, a delicate fair child, four years of age, whom he attended for this disease. He ordered lint, wet with lead lotion, and covered with oil silk to be applied, in order to keep off the external air, and also to prevent the urine running upon the parts.]

A few grains of hydrarg. cum cretâ were given every second night, and an occasional dose of castor oil in the morning. This plan was continued until the 11th, when the parts looked much quieter and better. Zinc ointment was then substituted for the lead lotion, and five drops of liquor potassæ, with as many grains of calomel and magnesia in water, directed to be taken twice a-day. On the 24th he was perfectly cured.

[Mr. E. also alludes to a case of chronic eczema of the scrotum of two years standing, occurring in an adult fifty-nine years of age.]

The part affected was dry, red, rugose, traversed in several directions by fissures and chaps, from which a serous fluid exudes at times, and is covered with thin greyish incrustations, some of which are of a considerable size. There is much itching, and occasionally an acute attack of eczema comes on, the part becoming inflamed and oozing. The patient was ordered to keep a very strict diet, to abstain from all fermented liquors, salted and heating articles of food, and to take 20 minims of the liquor arsenici et hydrarg. iodidi twice a day, with five grains of Plummer's pills at bed-time, and to apply a mixture of zinc ointment and the unguent. plumbi acetatis constantly to the parts by means of a piece of lint cut to the proper shape. This plan was continued to the end of May, the quantity of Donovan's solution having been increased to 30 minims per dose. The affection of the scrotum was very much better, the irritation had been subdued, no fresh attack of the disease had come on, and the skin was less rugose, did not desquamate, was softer, and altogether much improved. The patient continued the arsenical until the middle of June, when he was perfectly well. A few weeks afterwards the disease returned, but was soon cured by the same means.

The most useful local applications in cases of eczema of the scrotum are, after any active inflammatory action that may be present has been subdued by poultices, fomentations, or, if necessary, leeches, the application of lint dipped in warm lead lotion, and covered with oiled silk, or the unguent. zinci, either alone, or mixed with the cerat. plumbi comp., or ceratum plumbi acetatis, or the unguent. plumb. comp. In cases of eczema about the anus I have found the addition of the extract of belladonna to one or the other of those ointments, but more especially to the unguent. plumbi acetatis, a very efficient means of allaying the irritation. The

general treatment must be conducted on the principles that generally guide us in the treatment of the more obstinate varieties of eczema. Most dependence is to be placed on the nitric acid diluted, or on the liquor potassæ arsenitis, or Donovan's solution, given carefully. Every means will, however, fail, unless strict attention be paid to diet and general hygienic measures.

[Eczema of the scalp, however, appears to be the most commonly met with; for of all cutaneous diseases seated in this locality, as many as forty-three per cent. are cases of eczema. It is exceedingly difficult to remove; it occurs mostly in children, very rarely in adults. Mr. E. observes that,]

Chronic eczema of the scalp, although presenting considerable variety in its characters, seems to resolve itself naturally into the three following species:

1. Simple chronic eczema, which may assume either a moist or a dry form. 2. Eczema furfuracea, corresponding to the porrigo furfurosa of Willan. 3. Eczema amiantacea, which is an extreme condition of the last variety.

Simple chronic eczema of the scalp may, as has just been stated, assume either a moist or a dry form. In the moist variety of the disease there is always a very copious discharge of a thin serous fluid from a number of small openings, the remains of former vesicles, that lie closely scattered on the inflamed and tender surface of the scalp; this discharge, which is of an acrid and irritating nature, is apt to increase the inflammation in that part of the skin over which it flows. If it be very abundant the hair looks as if it had been soaked in a thin solution of gum arabic, being melted together in locks, which have a dirty yellowish grey moist appearance, and between and under which the inflamed scalp may be seen pouring forth the discharge. As this lessens in quantity, soft yellowish-grey scabs will be formed, which gradually losing their moist appearance will be found to resemble those that characterise the dry variety of the disease. In the midst of this, acute attacks of eczema, attended by a great evolution of vesicles, by increased heat and redness of the scalp, frequently occur, adding very greatly to the severity and obstinacy of the disease; and the distress of the patient is very often greatly increased by a chronic inflammation of the eyes and ears, which is a common complication of this form of eczema. As the discharge lessens, and the inflammatory action subsides, the moist passes, in many cases, into the dry variety of chronic eczema.

The extent to which the scalp is affected in the dry form of chronic eczema varies considerably; there may merely be a few scabs in a few scattered situations, or the whole head may be thickly coated with them. This variety of the disease is characterised by whitish, yellowish, greyish, or yellowish green scabs or scales, usually of a very irregular figure and degree of thickness, separated from one another by cracks and fissures which allow the dry red inflamed scalp to be seen. These incrustations are always more or less lamellated, and are usually thinner at the circumference than in the centre, which is the part last separated from the scalp. They are loosened from the skin by being gradually pushed up by the growth of the hairs that traverse and are entangled by them; the part that is farthest from the vertex being the first raised up; the sides are then separated, and when the upper and middle parts are detached the scab falling off, leaving the subjacent skin dry, glazed, and of a dull red colour. These scabs are most numerous about the vertex, the sides of the head, and the ears. The hair is frequently not at all affected in this disease, and never permanently so, although it may become dry, thin, and brittle; but as it returns to its original strength and appearance as soon as the disease is cured, no permanent baldness ever results.

It is only in particular instances that the two varieties of form in which

simple chronic eczema of the scalp occurs, are separated by characters as well and as clearly defined as those above mentioned; in general they run insensibly into one another, varying as any cause may occur to increase or diminish the inflammatory action going on in the scalp. The moist. indeed, has a tendency in all cases, in its progress towards a cure, to pass into the dry form of the disease, and this again into the species that will immediately be described—eczema furfuracea. We must, therefore, in nature expect to find the appearances above described as characterising the two varieties of simple chronic eczema, combined as it were in various proportions which cannot well be described, but the exact characters of which may readily be learned by observation of the disease itself.

The next variety of chronic eczema of the scalp, eczema furfuracea, is of very common occurrence, and is characterised by a number of thin scales, which vary very considerably in size, and are either moist, adhering to the hairs, or dry and loose. When slight, and of but trivial extent, this disease appears in the form of a few thin laminated scales of a whitish or greyish colour, which are the remains of vesicles that have either shrunk without effusing their contents, or else have contained such a minute quantity of serum, that when it has dried up it has been insufficient to form a scab.

The more severe forms of the disease are usually preceded by an acute attack of eczema of the scalp, which after passing into a chronic condition gradually assumes the appearances characteristic of the furfuraceous variety. In this state the epidermis appears to separate itself into detached scabs, which are often loosened in considerable abundance in consequence of the patient rubbing himself. Occasionally a few vesicles arise, from which a serous fluid exudes, forming the scales into masses, and agglutinating them and the hairs together. These masses of scales and hair give a soft yielding sensation to the finger when pressed upon, and if they be removed we shall find the subjacent cutis to be red and inflamed. These scales vary in colour from nearly a pure white to an ash or yellowish-grey, which occasionally passes into a yellowish-brown, and rarely into brown, presenting when of this latter hue a close resemblance to bran. This disease may be confined to patches on the scalp, or it may extend over the whole of the head. The hairs are never lost, but occasionally become thinner and lighter in colour.

When this affection is on the decline the discharge dries up, the scales fall off, separating in large quantities when the patient shakes or scratches his head, so that it is impossible for him to keep his clothes free from them, the pruritus ceases, and the scalp gradually assumes its natural appearance. The third variety of chronic eczema of the scalp, E Amiantacea, is by no means a common affection. When it does occur it is most frequently as a consequence of the preceding one.—*Ibid, Jan.* 9, 1846, *p.* 65.

[The general treatment of chronic eczema of the scalp will vary according to the age and constitution of the individual, and also according to the immediate exciting cause of the disease. In the local treatment, the same difficulties do not present themselves; this must be regulated by the actual state and duration of the disease.]

In the first case, where the disease appears in an otherwise healthy child, about the period of dentition, not only giving rise to no constitutional disturbance, but, on the contrary, having a tendency to prevent the occurrence of mischief that is so apt to happen at that time, we must be especially careful not to do anything that can suddenly check the eruption; and we must resist all solicitations dictated by the vanity of parents to effect a rapid cure. In these cases we should content ourselves with cutting the hair short, applying bread-and-water poultices, so as to remove incrustations, and allaying undue irritation by means of the application of rags dipped in olive oil, or smeared with zinc ointment; or, as Cazenave and *Schedel* recommend, direct the nurse to sprinkle some of her own milk

upon the affected part. The bowels should at the same time be open by means of small doses of hydrarg. c. creta and castor oil, and the gums be well lanced if there be any irritation in that quarter. Antacids, of which the fluid magnesia is one of the best, will likewise be found very serviceable. These cases need give the practitioner no uneasiness; the disease, as soon as its purpose has been served in the economy, gradually subsides, and usually disappears without much trouble. Should it lapse into a very chronic condition, assuming the furfuraceous character, it may most generally be readily cured by means of those applications that I shall immediately mention.

[In the treatment of this disease in children, they must be weaned as soon as possible on beef tea, broth, or other nutritious diet; mild tonics should also be given, as a few drops of the tincture of ammonio-chloride of iron, or the iodide of iron, twice a-day; the latter should be given in from half-grain to two grain doses. After the age of puberty, the disease is generally met with in females, accompanied with irregular performance of the menstrual function: this must be regulated by the pil. aloes c. myrrha, the warm hip-bath, leeches to the groin, cupping over the sacrum, &c. In more advanced life it is attended with some derangement in the stomach, intestines, or liver: blue-pill, Plummer's pill or other mild alteratives should be given; all stimulants should be avoided; and occasionally fixed alkalies, as the liq. potassæ should be given. If these means fail, diluted nitric, or sulphuric acid should be tried, and in obstinate cases tincture of cantharides, liq. arsenicalis, or Donovan's solution, will be serviceable; at the same time, the local treatment is not to be neglected. On this Mr. Erichsen remarks,]

In the early stages, when the disease presents the character of simple chronic eczema, cleanliness and mild antiphlogistic means are alone necessary. The head should not be shaved, on account of the irritation thereby induced, but the hair must be removed by being cut off as close to the scalp as possible by means of a pair of curved scissors, so as to prevent the discharge from accumulating in and beneath it, and thus becoming an additional source of irritation to an already inflamed part. Warm poppy-head, quince-seed, or marsh-mallow fomentations, applied by means of a large soft sponge, or emollient bread-and-water poultices, must then be employed, for the double purpose of allaying irritation and removing scabs, so as to prepare the surface for the employment of other means. After the surface has been well cleared by these means the irritation will often be best allayed by the application of zinc or lead ointment, of linen rags soaked in olive oil, or of lint dipped in tepid lead lotion, and covered with oiled silk. The great point is to prevent the access of air, which always, especially in young children, increases very considerably any existing irritation.

When the disease has assumed a more chronic and inactive condition, passing into the eczema furfuracea, it will be necessary to have recourse to gentle stimulants. For this purpose a lotion, composed of from one to two drachms of the sulphuret of potass, either alone or combined with an equal quantity of the carbonate of the same alkali, in a pint of plain, or of lime water, will be found one of the most useful applications, and one that has seldom disappointed me. The head should be well washed three or four times a-day with this lotion, diluted, if necessary, to such an extent, as merely to produce a gently stimulating action. At the same time, an ointment, composed of from a scruple to half a drachm of carbonate of potass to the ounce of lard, or one of creasote in the same proportion, or that of the white precipitate, should be applied every night after the last application of the lotion. It should be washed off in the morning, and then re-applied, and in the course of six or eight hours washed off again; thus alternately applying and washing off the ointment at stated intervals during the four-and-twenty hours: this alternation of stimulus will be found very useful, and productive of more benefit than the continuance of any one application.

If a somewhat stronger stimulus be required, the affected part having fallen into an inactive condition, the unguent. hydrarg. nitrat. diluted with spermaceti ointment, as recommended by Dr. A. T. Thomson and Rayer, the common sulphur ointment, as employed by Mr. Phillips, or a mixture of equal parts of this and tar or creasote ointment, will be found most useful. The latter application, in particular, in combination with the sulphurous lotion already recommended, has proved of most service in my hands. I have already on a former occasion expressed my opinion of the oiled-silk cap, which is so commonly worn in cases of eczema of the scalp, and which, in my opinion, is a most injurious covering to the head: for by confining the perspiration it keeps the scalp in a constant vapour bath, by which means the skin is soddened, and that state of passive congestion, which it is our object to get rid of, increased. A thin linen cap, which should be changed as often as it is soiled, is by far the best and cleanest covering to the head.

In conclusion, it cannot be impressed too strongly, that during the earlier stages of all eczematous affections of the scalp, the only mode of treatment, whether local or general, that is likely to benefit the patient, is one conducted upon mild antiphlogistic principles; and that it is only when the affection has acquired a chronic inactive character, and more particularly when it has assumed the furfuraceous condition, that local stimulation, even of the mildest kind, can be borne, or that those internal remedies, which are generally looked upon as exercising something of a specific influence on this disease, will act otherwise than injuriously.

*Ibid. Jan.* 16, 1846, *p.* 107.

*Chronic Eczema of the Hands.*—[This generally arises from the direct application of irritating substances to the parts, as lime in bricklayers, sugar in grocers, potass or soda in washerwomen, mordants in dyers, or minute particles of steel in smiths, wheelwrights, &c.]

The characters that this disease presents when attacking the hands are those assumed by chronic eczema in its worst and most inveterate forms. There is, in the first instance, an eruption of vesicles, which are most generally small and pointed, projecting but slightly above the level of the skin, and which are at first confined to a small spot, usually on one of the knuckles, or on the back of one of the fingers, whence the disease gradually creeps on until the greater portion of the back of the hand may be involved. In some rare cases, however, these vesicles are large and prominent.

[The diagnosis is of importance, particularly if there has been no local irritant, as it leads to suspicion, more especially in the better class of society; it may be confounded with scabies and psoriasis.]

From scabies the diagnosis is not always easy, though in the majority of cases it is not attended with any difficulty. In eczema the vesicles are usually small, agglomerated, and collected in clusters on the back of one or two knuckles, or in patches about the dorsal aspect of the hand; and occasionally we see a raw, excoriated, oozing surface, which is never met with in scabies. In scabies, on the contrary, the vesicles are generally large, more distinct, not clustered; and situated chiefly between the fingers at their roots, and not on the knuckles or back of the hand. In scabies also there is a peculiar pruritus, giving rise to an irresistible propensity in the patient to scratch himself. In eczema this is not the case, and the morbid sensation is of a smarting or burning character. When, however, as is occasionally the case, the vesicles of eczema are larger and more distinct than usual, the diagnosis is not so easy, and must depend rather upon the history of the case, upon the patient's sensations, and the situation of the vesicles, than on their individual characters.

[The vesicular character of the disease is a sufficient guide in diagnosis, and when it becomes chronic, and assumes a furfuraceous appearance, it is of little practical importance, as the treatment is directed by the condition of the part, and the causes of the disease. The treatment is the same as when occurring in other parts, only the hand must be kept perfectly at rest;

therefore all those occupations or exercises which may have caused the disease, must be at once given up. Mr. Erichsen observes:]

The topical applications that I have found of most service in cases of chronic eczema of the hands, have been, in the earlier stages, or during any temporary exacerbation of the disease, the water dressing, applied by means of oiled silk gloves, or finger-stalls; and, at a more advanced period, when the disease has assumed an inactive character, a solution of nitrate of silver, in the proportion of one grain to the ounce, kept constantly applied in the same way as the water dressing. I have lately attended with Dr. Barlow, of Upper Gloucester Place, a lady who had suffered for some months from chronic eczema of the hands, and who has been completely cured by the continued application of this lotion, in conjunction with the constitutional treatment that will immediately be mentioned. A solution of the carbonate of soda, in the proportion of from two to four grains to the ounce, will likewise, in many cases, be found of service, especially in allaying the irritation which is so troublesome. For the same purposes the following lotion:—℞. Acidi hydrocyan. dil. ʒss.; zinc oxydi, ʒj.; aquæ rosæ, ℥viij., may be kept constantly applied.

The rhagades will usually be found to heal quickly if the hand be kept quiet, and the unguent. hydrarg. precipitat. alb. either alone or mixed with a fourth of citrine ointment, be kept constantly applied. In the early stages of the disease, while the affection is limited to a small patch, I have occasionally seen the application of a slice of fresh lemon of service. This, however, is only likely to be successful when the disease occupies a patch of the size of sixpence or shilling. In some cases, the disease will have yielded entirely, with the exception of a portion of the circumference of the part originally affected, where it continues most obstinately, slowly creeping on. When this is the case it may most generally be checked by rubbing the part freely with the nitrate of silver in stick.

Whatever local means be adopted, however, the cure, if effected, will not be a permanent one, unless constitutional treatment be had recourse to. This must chiefly consist in the removal of any gastric, intestinal, or uterine disturbance, and in the administration of vegetable bitters, with the dilute nitric acid, or small doses of the bichloride of mercury. I have usually found much benefit from the administration, twice a day, of thirty minims of the dilute nitric acid, or the twenty-fourth of a grain of the bichloride of mercury in infusion of cinchona. These means are especially serviceable when the disease occurs, as it most generally does, in pale delicate subjects, who are in an atonic condition. Occasionally, when the disease has, either from the length of time that it has existed, or from some peculiarity in the constitution of the individual affected, assumed a more obstinate and intractable form, it becomes necessary to have recourse to more active measures, such as the employment of Fowler's or Donovan's solutions. Whatever treatment be adopted, it will be well to warn the patient of the great likelihood of a relapse in these cases; the disease, though apparently perfectly cured, reappearing under the influence of the slightest cause of irritation; and, indeed, nothing is more common than to find patients returning four or five times in the same year with fresh attacks of this affection.

*Ibid, Feb.* 13, 1846, *p.* 278.

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172.—ON THE USE OF TAR IN SENILE AND OTHER CHRONIC ERUPTIVE DISEASES.—By —— WETHERFIELD, Esq.

[On this subject, Mr. Wetherfield pretends to advance no novel ideas. He says:].

The first case related was that of a gentleman, aged ninety, suffering under prurigo senilis, affecting both legs. The common tar ointment was applied every third or fourth day, the parts being afterwards covered with an

elastic roller. Under this treatment he recovered in a few days. Two cases of eczema impetiginodes, the first of eight years', the second of one year's duration. In these cases, the internal exhibition of tar in the form of capsules, each containing ten minims, three times a day, was added to the external application, and in a month the disease was removed. Two children were shown to the society, who had suffered for five and six years respectively, with eczema capitis, extending in the form of eczema over all parts of the body and limbs. The treatment consisted of capsules of tar taken three times a day, and tar ointment applied every day to all parts affected. Under this plan, continued for about two months, they perfectly recovered. Two cases of acne punctata, which had resisted all treatment, allopathic and homœpathic for three years, and had disfigured the parties by the spotted and blotched face which this disease induces, yielded to the same treatment in between two and three months. From three to six capsules were taken daily. A little of the tar ointment was applied at bedtime towards the end of the course, and washed off in the morning, and this only to the larger pustules. Mr. Wetherfield concludes his paper by stating, that his object in bringing this old remedy once more before the profession was to induce them to give it a trial, especially in the capsule, feeling persuaded that it would be found a valuable medicine, whenever it was requisite to excite the capillary system, either in the skin or kidneys.

[Dr. Merriman states that Alibert and Dr. Seymour have been in the habit of using the same remedy.]

Mr. Wetherfield had used the capsules with a good result in cases of obstinate gleet and of chronic bronchitis; he had used the tar externally and internally, in a case of prurigo formicans, but sufficient time had not yet elapsed to determine that it was quite successful. The tar capsules were easily swallowed, even by children, and the remedy did not disagree with the stomach. It appeared to have a slightly aperient, a diuretic, and diaphoretic effect. *Lancet, Jan.* 17, 1846, *p.* 72.

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173.—ON THE TREATMENT OF PITYRIASIS.—By JAMES STARTIN, Esq., Surgeon to the London Cutaneous Institution.

[Mr. Startin considers the causes of pityriasis to be the same as those of other squamous diseases, and, consequently, will require, in many respects, similar treatment. In pityriasis, however, the external applications should be of a soothing nature—baths medicated, with mucilage of linseed, milk, yolk of egg, glue, &c.; at the same time internally, we should give demulcents and mild diuretics to increase the renal secretion, in order to provide a substitute for the suppressed efferent action of the skin. Mr. Startin also uses a substance called glycyrrhine, as an external application. It possesses several advantages peculiar to itself, which Mr. Startin points out in a lecture delivered by him on this subject. It is a method of treatment never previously laid before the profession.]

It consists in the employment of a liquid lately discovered that has the property of remaining fluid, and resisting evaporation, under any temperature to which the body can be exposed: indeed, I have wetted a common dinner plate with this fluid, and kept it in an oven whilst a joint of meat was cooked by its side, and the liquid has experienced no evident change or diminution. The facility with which this body mingles with water or other fluids, renders it an invaluable adjunct to lotions, poultices, and applications, whose utility consists not only in diminishing temperature by evaporation, but in softening and relaxing the heated and inflamed skin. The tendency to dry up and adhere to the part, as is well known, often frustrates the beneficial effects of these applications, and various counteractive expedients have consequently been adopted, as the addition of fatty matters, covering the poultice, lotion, &c., with oiled silk. Now, this is rendered

entirely unnecessary by the addition of the substance I hand round for your inspection. You will perceive it is like oil, and when rubbed upon the skin, it furnishes a watery coating or varnish, which even the microscope fails to distinguish as different from the ordinary secretions of the part. Half an ounce of this liquid, added to half a pint of lotion, will prevent the skin ever becoming dry. In baths, the result is also equally apparent; but here the cost is an obstacle, though the liquid is by no means dear, as, at the present time, tons of it are thrown away; but if, as I anticipate, its application prove general, its price will be shortly augmented. This fluid body, to which the chemists have given the name of glycyrrhine, is a peculiar uncrystallisable saccharine matter, found in animal fats or oils, or produced during their admixture and combination with alkalies and oxides. Thus, it is most abundant in the refuse of the soap-maker. That which you are now inspecting was procured from Apothecaries' Hall, and is formed during the manufacture of lead plaster on a large scale. I should mention that it requires to be diluted with water for use, otherwise it makes the skin feel stiff, uncomfortable, and sticky.

*Med. Times, Feb.* 17, 1846, *p.* 368.

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174.—ON THE CONCENTRATED ALCOHOLIC SOLUTION OF STAVESACRE AS A CURE FOR THE ITCH.—By THOMAS H. BURGESS, M.D., &c.

[Dr. Burgess has lately assisted at some interesting researches, at the Hospital of St. Louis, into the history of the acarus scabiei, and the treatment of the disease it produces. He brought the subject before the Royal Medical and Chirurgical Society in March last, and described the method of using the alcoholic solution of stavesacre for the treatment of this disease, as follows:]

The hands of the patient were immersed in two vases filled wih a strong alcoholic extract of stavesacre, and retained for half an hour. The hands were now examined by the microscope, and several acari removed. In this instance the remedy was not entirely effectual, as some of the acari were still alive. The remedy was again applied for half an hour, when not a single living acarus was discovered; they were examined under the microscope, and showed no signs of life. On the following day the same experiment was repeated on another patient, using the same precautions, and with the same success, for on examining the acari, not the least sign of life was discovered in any. The patient was examined again on the following morning:—he said he was entirely free from itching; the skin was paler, and there was no living acarus found in the parts to which the extract had been applied. The author states that he has satisfied himself that it is not the alcohol that destroys the acarus, for when used without medication it has not succeeded. He concludes by referring to the advantages presented by this mode of treating itch over the ordinary treatment, viz., rapidity and cleanliness.

Mr. Lloyd cures the itch by a lotion, consisting of an ounce of sulphate of copper to a pint of water; this he applies after washing off the scabs; it is an almost certain cure; he employs it in private and public practice.

Dr. Ogier Ward treats scabies by a simple lotion of the iodide of potassium, a single washing with which, in some instances, completely eradicates the disease. The treatment of this affection was by no means difficult. To insure a complete success he applies the sulphur ointment at night, and the lotion during the day. It usually effects a cure in seven days. The lotion consists of one drachm of the iodide to eight or sixteen ounces of fluid, according to the delicacy of the cutaneous surface.

*Med. Gaz., April* 3, 1846, *p.* 608.

175.—SINGULAR CASE OF BLACK SECRETION FROM THE SKIN OF THE FOREHEAD AND UPPER PART OF THE FACE.—By William Teevan, Esq.

[In the last Vol. of the Medico-Chirurgical Transactions, Mr. Teevan has recorded a remarkable case; the patient, a girl fifteen years of age, was the subject of this remarkable discoloration. It was first observed in January, 1845, on the left under eyelid, and internal angle of the eye. It was at first of a brown colour, but soon became black, and spread over the forehead and eyelids of both eyes. The black secretion thus formed could be washed off, and was sufficient to discolour a large quantity of water: when it was being secreted, there was a burning heat in the parts, and so decided was this, that she could tell within a quarter of an hour when the blackness would show itself. It invariably commenced in the same situation, and spread as noticed above. Mr. Teevan states he has no knowledge of the physiological cause of the disease; the secretion he considers analogous to melanosis. There is no other case of a similar description on record.]

*Medico-Chirurgical Transactions, Vol. 28, p. 611.*

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176.—PHLEGMONOUS ERYSIPELAS.—NEW MODE OF TREATMENT.—By M. Gerdy.

[M. Gerdy has paid considerable attention to the etiology of phlegmonous erysipelas in the extremities.]

M. Gerdy attributes the disease to the naturally declined position of the extremities, to the stagnation of the blood in the peripheral capillaries of the latter, in consequence of which the contused part first becomes superficially inflamed under the form of erysipelas, and, subsequently, more deeply under that of phlegmon: and, if not speedily remedied, by the means we are about to indicate, the disease passes into that of suppuration, the consequence of which is, the formation of dissecting abscesses, and separation of the integuments to such an extent as to necessitate amputation or produce death. Erysipelas seldom assumes the phlegmonous or suppurating character in the head or neck; and for the reason, says M. Gerdy, that the cause we have first indicated does not operate there, the venous circulation being free and descending.

[From this view of the case M. G. considers that the great object in treatment, should be to prevent stagnation of blood in the extremities, and this he effects by *position*, and the result is most striking.]

*Monthly Jour. of Med. Science, March, 1846, p. 210.*

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177.—TREATMENT OF WARTS.

The hydrochlorate of ammonia dissolved in water, and the hydrochlorate of lime are the most certain means of destroying them; the process, however, in both instances is very slow, and demands perseverance, for if discontinued before the proper time, no advantage is derived.—*Eisenberg's Advice on the Hand.* *Dublin Med. Press, Nov. 26, 1845, p. 342.*

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## OPHTHALMIC SURGERY.

178.—ON THE TREATMENT OF INFLAMMATION OF THE EYE.—By Dr. Jacob, Dublin, F. R. C. S. I.

[Dr. Jacob remarks that the treatment of inflammation of the eyeball ought to be upon the same general principles as that of inflammation in other parts. He says,]

The heart's action is to be weakened and the size of the capillary vessels

reduced by diminishing the quantity of circulating blood by bleeding; and that weakness of the heart's action and reduction in size of vessels is to be continued by nauseating medicines until the local vascular disturbance is subdued, or until the attempt is found fruitless. The supply of new blood is at the same time to be cut off by removing the contents of the intestine by purgatives and a denial of nutritious food; while the secreting powers of the liver, kidneys, and skin, are to be put in requisition to rid the fluids of pernicious ingredients, should such be present. These are the resources of medicine in the first or acute stage of the disease, but when the inflammation proceeds unchecked other remedies must be employed. In what I consider the second stage the effects or consequences of inflammatory action are to be prevented or arrested, such as adhesion, effusion, opacity, thickening, and complete disorganization, with loss of healthy functions; and this is to be effected by medicinal agents exercising peculiar or specific influence, the nature or direct operation of which we do not well understand; of which mercury, iodine, bark, colchicum, and turpentine, are the principal. In the third stage, when the inflammatory action has entirely subsided, and its more permanent consequences only remain, the efforts of the practitioner are directed, often in vain, to effect the stretching of adhesions, the restoration of transparency, and the revival of sensibility and muscular contractility, by the application of belladonna, and the internal administration of mercury or iodine in smaller doses and for longer periods, with local stimulation and cutaneous irritation.

[Many practitioners consider that local inflammatory action is best arrested by the frequent abstraction of blood. Dr. Jacob thinks this method has little claim upon our confidence; he says:]

It should be recollected that we seldom see these cases at the very commencement of the attack when the abstraction of blood would be most beneficial, most persons considering what they call a "sore eye" of little importance until alarmed by the redness, pain, and defective vision. They are oftener presented to us after the vessels have become permanently enlarged, and the inflammatory condition has been firmly established; and then it is, that the propriety of bleeding comes to be questionable. Inexperienced persons think that when they see the eye very red, it is necessarily in a state of inflammation; but this is a great mistake, for the redness or increased vascularity may be but a consequence of inflammatory action which has ceased or has been subdued. Bleeding, therefore, should in my opinion be resorted to, if considered necessary, at the very commencement of the attack, when a hope can be entertained that by weakening the heart's action and reducing the size of the capillaries, the disorganizing processes of inflammation may be prevented: to delay it until that stage arrives in which diminution in quantity or deterioration in quality of the circulating fluid might rather retard than promote the salutary processes of the system, appears very injudicious.

[The quantity of blood in the system ought not only to be diminished from without, but also the supply from within, by removing the contents of the alimentary canal, and interrupting digestion, chylification, and absorption. Dr. Jacob thinks the best medicine for unloading the primæ viæ in these cases, is a combination of calomel and compound colocynth pill. He observes:]

In those cases which are repetitions or returns of former attacks repeatedly treated with mercury, I generally try depletion and antimonials, with confinement to bed and low living, for two or three days, before I resort again to that remedy, and often with success. I give tartrate of antimony or James's powder at first, to cause slight nausea occasionally for about twenty-four hours, and for another day or more continue it as a diaphoretic.

Mercury, which above all other remedies, is most to be relied on in the treatment of inflammation of the eye, remains to be noticed. That it is a medicinal agent capable of exercising a powerful, peculiar, and, perhaps,

unexplained influence in arresting inflammation of the eye, as well as inflammation of other parts, seems to be now very generally admitted, and can scarcely be denied. It probably, however, acquired its character in this respect from its effects in syphilitic iritis, which are unquestionably more decisive than in any other form. That iritis or inflammation of the eye may be removed by depletion and other general remedies, and that it may even cease or disappear without any medical treatment, must be admitted; but it must also be admitted, that its removal is accelerated and rendered more certain by the administration of mercury. In some other parts of the body inflammation may, perhaps, be encountered by general treatment only, or may be permitted to take its course and wear itself out without destructive consequences, but in such an organ as the eye, the construction of which is so exquisitely delicate, and the component parts so numerous, minute, and complicated, the changes produced by inflammatory action must be prevented by every means in our power, no matter what the risk may be of causing constitutional disturbance or any other mischief or inconvenience. The form in which it is to be administered, the quantity to be given, and the time for which it should be continued, must depend on the age, constitution, and peculiarities of the patient, the activity of the symptoms, and other circumstances. In common cases of simple uncomplicated inflammation, with foul tongue, defective discharges from the bowels and kidneys, I am in the habit of commencing with mercury in combination with a purgative and antimonial, giving about three grains of the blue pill with as much compound colocynth pill and an eighth or tenth of a grain of tartrate of antimony three times a day for a couple of days, then five grains of the blue pill with the same quantity of the antimony for about two days more, and, finally, five grains of the blue pill three or four times daily, adding a little opium if it continues to affect the bowels. This I generally find sufficient to produce the mercurial effect in six or eight days, and perhaps a more rapid introduction of mercury into the system is unnecessary, or even injurious. Should the practitioner, however, consider a more decisive administration of the remedy necessary, from the activity of the symptoms or the inactivity of this preparation, a couple of grains of calomel with a quarter of a grain of opium, may be given every four or six hours, and beyond this I never find it necessary to go.

The length of time during which the mercury should be continued or the exact quantity to be given, has not been determined by exact experiment, neither, perhaps, has it been ascertained whether or not this medicine exercises its peculiar specific influence without displaying its effects on the gums and salivary glands. In syphilitic iritis the inflammation generally begins to give way about the fifth, sixth, or seventh day, and is often subdued in another week; but in simple inflammation of the eye the effect is not so soon or so certainly produced. The safest course will, therefore, probably be to give the mercury until the state of the gums or the state of the eye proves that it is causing its usual effects, and to continue its administration until the inflammation subsides, or until it is proved that perseverance is useless. It is scarcely necessary to say that it need not be given to the extent of producing ptyalism, but merely persevered in until its presence in the system is obvious, and if the inflammation yields without any tenderness of the gums or other mercurial symptoms, the surgeon may, perhaps, be satisfied without this evidence of the influence of the remedy.

*Dublin Med. Press, April 1, 1846, p. 193.*

[In the treatment of ophthalmic diseases, it should be borne in mind, that unless the production of ptyalism be absolutely necessary, it should not be hastily produced. Mr. Lawrence notices the two opposite opinions which are extant respecting the simple antiphlogistic and mercurial treatment of iritis: he says,]

Although mercury alone, or at least in conjunction with purgatives and restricted diet, will often cure iritis, I have seen many instances in which

the sufferings of the patient have been protracted, and the organ has experienced serious injury from the continued progress of the inflammation when the use of mercury has not been preceded or accompanied by the loss of blood. The practical conclusion, therefore, at which I have arrived after ample experience of the complaint under every variety of treatment, is, that iritis generally, and the syphilitic form of the complaint particularly, will be most advantageously treated by the successive or combined enjoyment of antiphlogistic means and mercury; that this plan will give the quickest relief, will most effectually arrest the inflammation, restoring the iris to its healthy structure and functions, and will afford the best security against the return of the disease.

[It is probable there are some other remedies which have a direct influence in checking iritis; but it is very questionable whether they ought to be substituted for mercury in the treatment of this disease. Dr. Jacob observes that]

Iodine, turpentine, colchicum, and bark, are valuable remedies, where the inflammation is modified by specific disease, or general constitutional derangement; or where mercury has already been given, or cannot with safety be used; but in a recent acute attack, occurring for the first time in a person of otherwise good health, they are scarcely to be relied on in preference to bleeding, mercury and the other means noticed. In fact, the powers of these remedies have scarcely been fairly tested in consequence of the reliance placed in depletion and mercury: they have been generally reserved until the others have failed, or they have been adopted because the others have been found inadmissible. *Ibid, April* 15, 1846, *p.* 225.

[Dr. Jacob gives us some valuable hints on the use of Belladonna in ophthalmic cases. He says, on this subject:]

Of all the injurious effects or consequences of iritis, the most frequent is adhesion of the iris at the margin of the pupil to the capsule of the crystalline lens, and to prevent this every effort should be made. I have already expressed my belief that in a perfectly formed eye at the earlier periods of life the margin of the pupil touches the capsule of the lens when the aperture is contracted, or even in its ordinary state between dilatation and contraction: it follows, therefore, that if these surfaces become inflamed, adhesion between them will probably take place, and experience proves that it does so. From the very commencement, therefore, the extract should be applied, and should be continued until the inflammation subsides. It should be mixed with water until it acquires the consistence of paint, and will flow from a camel-hair pencil without running off from the skin, and should be freely applied to the eyelids, brow, and upper part of the cheek. I generally paint the surface twice, allowing the first application to dry before I make the second, and thus I secure a sufficient quantity in close contact with the skin. I then, when it adheres, lay a scrap of damped old linen over it to keep it moist; because I believe that its effect is more certain and powerful when in this state than when dry, and I direct a lotion of one or two drachms of the extract to eight ounces of water to be used to moisten the fold of old linen, from time to time for an hour or two, and even to continue the application as a cooling lotion if the patient feels it agreeable. If, however, local applications are not found comfortable, or do not appear to be useful, the belladonna need not be applied more than once, or at most twice in twenty-four hours, because its effect on the iris continues for a day at least, and sometimes much longer. It is also sometimes necessary to restrict its use to a daily application in consequence of its causing irritation of the skin, or even slight excoriation or eruption. When this happens, I apply it once a day, as described, and after an hour, have it carefully washed off with a large camel-hair pencil or very soft sponge, smearing the surface, when dry, with cream. It should be recollected that in some persons, and especially in the aged, the effect is not produced on the pupil by the application to the skin, probably in consequence of the cuticle being too thick or harsh.

When I apprehend this, I use the remedy more freely, and keep it on longer in a moist state. It is also to be recollected, that the belladonna will dilate the pupil when applied to the conjunctiva, while it has little or no influence when applied to the skin. Keeping this in mind, I sometimes venture, even during inflammation, to drop a fluid extract between the lids, which of course causes some irritation, but perhaps does little if any mischief, while it promises benefit by securing dilatation of the pupil, and thus preventing adhesions. As this narcotic locally applied is often found to allay pain, especially in neuralgic affections, there can be no objection to its use in inflammation of the eye, and therefore it may be used, although it should not cause dilatation of the pupil. I have already stated that in the early or acute stage of severe inflammation the iris loses it power, and the pupil not only ceases to act, but is unaffected by the application of belladonna; I do not, however, discontinue its application on that account, because as soon as the inflammation is reduced, it begins to produce its effects, and either prevents adhesions, or if they shall have been formed, stretches or ruptures them. It may perhaps be supposed that too much importance is attached to the use of belladonna in inflammation of the iris and its consequences; but when it is recollected that contraction and adhesion of the pupil so frequently take place during its progress, and cause so much defect of sight, such a powerful means of preventing them should not be undervalued. It even sometimes, when the adhesions are very few and slender, ruptures them; although less frequently than is perhaps generally supposed. To effect this, at this period, I always apply the belladonna to the conjunctiva, as one drop of fluid extract used in this way is as effectual, if not more so, than a large quantity of the extract smeared on the eyelids. The extract itself, softened with water, or even a watery solution of it, will answer the purpose, but as it contains insoluble matter which forms a clot between the lids, a purified preparation should be preferred. It may be rubbed up with a little alcohol to coagulate the albumen contained in it, and then with water in sufficient quantity to render it so fluid that the insoluble matters will subside; or the atropia itself, or some of the salts of it, may be used in solution. I have obtained a solution of two grains of nitrate of atropia in one ounce of water from Mr. Donovan of this city, which causes full dilatation of the pupil with very little irritation of the conjunctiva. When the belladonna is applied to stretch the adhesions of an adherent pupil, and to enlarge the contracted opening for the admission of more light, after inflammation has disappeared, it should be used once at least in twenty-four hours. I prefer using it in the morning, because if applied at night the effect is diminished before the next day when it is most required. If the object be to stretch or break recent adhesions, it may be used both night and morning. After having been dropped into the eye, the lids should be closed and light excluded for 20 minutes or half an hour. In the sound eye of a young subject the pupil dilates in 20 minutes or half an hour, and continues dilated for 24 hours, and sometimes for two or three days or more. *Ibid, May* 6, 1846, *p.* 273.

[This substance is not only useful as an application to the eyelid for the purpose of dilating the pupil, and also acting as a sedative in many cases of iritis, but it may be used with advantage, greatly diluted, to the surface of the eye itself. In the British and Foreign Medical Review, a reviewer says: "In our experience, few cases of scrofulous ophthalmia have resisted the careful use of a belladonna collyrium, and in many other varieties of inflammation of the eyes, it proves scarcely less useful."]

*British and Foreign Med. Review, Jan.*, 1846, *p.* 164.

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179.—ON DILATATION OF THE NASAL DUCT IN FISTULA LACHRYMALIS
By A Reviewer in Dr. Forbes' Review.

[*This* disease consists of a closure of the nasal duct, causing the tears to

flow over the face; the sac often inflames and suppurates, producing an opening on the face, through which the pus and tears escape. Palliative measures are frequently of no avail, and the only method of cure is to keep the duct open, which is done generally by passing a style into the nasal duct, which the patient is obliged to wear constantly. It is very unsightly, and may be avoided by opening the duct through the natural orifice by means of a beautiful little sound and catheter brought into notice by Mr. Morgan. These instruments are shaped very much like the common catheter, with a greater curve near the handle, and of course very diminutive in size. The reviewer says,]

Any one with a little practice can open the nasal duct through the natural orifice, as easily as he can pass a catheter along the urethra. The profession is under great obligation to Mr. Morgan, of Guy's Hospital, for introducing this plan of treatment. We have repeatedly practised it with invariable success, and believe that it only requires to be more generally known to be almost universally adopted. The instrument which we use differs from that described in Mr. Morgan's work, and if any one will take a skull and the two instruments, he will find that the one here described passes with much less catching against the walls of the passage. We also find this advantage hold good upon the living subject. Of course some little variation of the curve will be required according to the formation of the passage in different patients. The instruments are of silver. In an acute case, as a general rule, the opening on the face need never be made. Leeches, &c., are applied, and the passage freed by the probe and injection of warm water by the catheter. In a chronic case of fistula the same mode of keeping the duct open must be employed, either for the cure of the fistula, or, if the patient have worn a style, to enable him to dispense with it.

The sound is first passed along the floor of the nose, its point directed outwards, until it lies fairly below the inferior turbinated bone. By turning the flat handle the point is then directed directly upwards, and moved gently backwards and forwards along the inferior surface of the turbinated bone, until a little cartilaginous ridge is felt. This is the edge of the orifice of the duct. The point is glided over it, and then, by depressing the handle, the instrument readily glides along the duct. No force must be used, as the bony structures around are very delicate. If much resistance be met with, from an old stricture, the point only must be passed into the stricture, and allowed to remain a few minutes. By repeating this daily, the obstruction is gradually, if slowly, overcome. In one case we found it necessary to pass the instrument daily, for upwards of a month. Assistance is also derived from cleaning the passage by the injection of warm water through a catheter of the same size and curvature as the sound. When once the passage is free, the tears descend, and all danger of a return of the disease is prevented by teaching the patients to pass the instrument for themselves. This they soon do with a little practice before a looking-glass. The sound may be used once or twice a week, and the catheter daily. It is seldom safe to omit their use altogether, as collections of viscid mucus, or recontraction of the duct, are very liable to occur, and the short time occupied at the dressing table is a very slight set off against the relief obtained by leaving off the style, or avoiding its insertion altogether. We do not hesitate to say, that any surgeon who once practices the nasal method of dilatation will for ever banish the style from his instrument case.

*Ibid, April*, 1846, *p.* 311.

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### 180.—ON WOUNDS OF THE EYELIDS

Dieffenbach insists strongly on the advantages of his fine insect needles in producing union by the first intention. A sufficient number must be ap-

plied to effect exact apposition. If the edges do not correspond, they must be made to do so by the use of fine scissors. If a large piece of skin be lost, and the edges cannot be united, subsequent ectropium is avoided by making an incision a quarter of an inch from the edge of the wound, which allows the edges then to be united. Opening of the lids during the healing process to be prevented by a strap of plaster, carried over them both. About the third or fourth day the needles are to be carefully removed, and the adherent wound supported by strips of plaster, to prevent reopening. If the needles are properly applied, no scar remains.

*Ibid, April.* 1846, *p.* 308.

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181.—ON THE DEPRESSION OF THE LENS IN CATARACT.—By Dr. WATSON, F.R.S.E., &c.

It forms an important object in this operation, to disengage the lens from its capsule before depressing it. This must be done very carefully and methodically, by making an incision in its posterior part, through which the lens is to be pushed into a breach made in the vitreous humour, not by forcibly pressing the lens against the membranes, but by the needle. To accomplish this, I introduce the small cataract bistoury through the coats of the eye, about a line and a-half from the margin of the cornea. It then penetrates into the vitreous humour, and is made to form a breach in it, at the proper place for the reception of the lens when depressed. The point of the instrument directed forwards to the lens, is then to be pushed across the eye to the opposite or nasal side of the lens. When it has reached this situation, the point is to penetrate the posterior part of the capsule, and, by drawing it outwards, made to incise it across at its middle, from the nasal to the temporal margin. This being effected, the point of the needle is to be pushed forward between the lens and the iris, its flat side placed on the lower part of the lens, and made to press it backwards and upwards, so that its lower margin may pass backwards through the opening made in the posterior parts of the capsule; by then shifting the point of the needle forward upon the lens, it is gradually pressed backwards and downwards into the breach of the vitreous humour, from whence it never rises. Thus we accomplish by previously cutting with the needle, what has been generally recommended to be done by forcible pressure upon the lens. Little or no inflammation follows this operation.

If, in this operation, the anterior part of the capsule of the lens remain entire, it is so far well, as the humours in the different chambers of the eye are thus prevented from incorporating, which lessens the risk of subsequent inflammation. If the capsule afterwards becomes opaque, it can easily be removed by a subsequent operation. In performing this operation, considerable dexterity of management is required for opening the capsule, disengaging the lens, and depressing it into the vitreous humour; and as the capsules, being generally transparent, are invisible, each of the different steps of the operation requires to be methodically executed. The same mode of operating answers for reclination. If, contrary to expectation, the lens is found to be soft, it may be broken to pieces, and these, or some of them, depressed into the vitreous humour where they will dissolve.

*Edinburgh Med. and Surg. Jour., Jan.* 1846, *p.* 66.

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182.—ON THE TREATMENT OF ACCIDENTAL CATARACT.—By Mr. WALKER, Manchester.

The treatment of accidental cataract is conducted in two different modes, according to the views entertained by different surgeons. The common

method is to allow the natural absorbent process to proceed with but little interference on the part of the surgeon. If there be much inflammation, leeches are applied and mercurials administered, as in a case of internal ophthalmia; the belladonna is also freely applied to maintain a dilated condition of the pupil.

With this treatment, in favourable cases, absorption gradually proceeds, the substance of the lens is removed, and finally the pupil becomes clear with the exception of the capsule, or a considerable portion of it, which requires to be treated as secondary capsular cataract. In less favourable cases it often happens that a considerable degree of inflammation comes on, which is protracted for a long period of time, and terminates in closed or contracted pupil; the iris and capsule being agglutinated, and the latter converted into a thick, tough, opaque membrane, which is impervious to light. Bearing in mind the strict analogy which exists between a case of accidental cataract and that in which the lens has been designedly broken up by the surgeon, we shall see the propriety of following up the practice adopted by Mr. Gibson, of early removing the fluid mass of cataract by extraction through a small incision of the cornea. This method was first employed by Mr. Barton. The puncture is to be made at the temporal margin of the cornea, with the extraction-knife, the point of the instrument being carried into the pupil, when the lens will frequently be discharged with the aqueous humour; if it do not escape in this manner, the knife must be withdrawn, and a scoop introduced through the aperture of the cornea into the pupil, when the softened cataract usually passes out with the greatest facility.

It has been urged as an objection to the performance of this operation, that, as there is generally a considerable amount of inflammation present in all cases of cataract induced by injury, such a proceeding shortly after the accident would be likely to add to, rather than diminish, the disordered action. This, however, is not found to be the case in practice. On the other hand, the irritation and suffering which, in most instances, succeeded to the laceration of the capsule and breaking up of the lens, will often be materially relieved by the removal of the irritating body from the eye. Such a result I have witnessed in very many instances.

[Since these remarks were published, Mr. Walker has constructed an instrument which combines the properties of both the knife and the scoop—as soon as the incision of the cornea is made, the fluid lens passes along the groove or scoop of this grooved-needle knife, and the pupil remains quite clear.] *Med. Times, Nov.* 29, 1846, *p.* 194.

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183.—CASE OF TRAUMATIC CATARACT.—By Mr. Walker, Manchester.

[Mr. Close reports a case of traumatic cataract, which was treated at the Manchester Eye Hospital, by Mr. Walker. A piece of iron flew with much force against the patient's right eye while at work as a mechanic. Mr. Close reports:]

On looking at the eye it is evident that the cornea has been cut in a perpendicular direction directly through its central portion, the edges of the wound being slightly uneven and covered with a layer of lymph; the iris appears to have escaped uninjured, the pupil being moderately regular, but rather contracted; the capsule of the lens is opaque, and a portion of opaque lens protrudes through the pupil. The globe is highly vascular.

[He was to have calomel gr. ij., opii. gr. ss., at bed-time. Belladonna applied at night, and lead lotion through the day; next day there was no amendment. The intolerance of light was very severe, and it was decided to puncture the cornea, and give exit to the broken-up lens.]

The grooved-needle knife was accordingly introduced at the outer margin of the cornea, and its point pushed into the pupil. By this operation a small

portion only of the dissolved lens passed along the groove of the instrument, the larger part, in consequence of the pressure, being forced through the wound in the centre of the cornea. This was followed by the immediate restoration of sight. He was then directed to be removed to bed and have a belladonna plaster placed over the eye.

On this case Mr. Walker remarks, "A remarkable circumstance, which I have more than once witnessed, is the protrusion and discharge of the dissolved lens through the wound of the cornea, on the introduction of the instrument into the eye. Another interesting point connected with the case is the rapid recovery after the removal of the foreign body (the broken-up lens), notwithstanding the severe penetrating wound of the cornea, effected too by an obtuse body coming forcibly in contact with the eye. The rapidity of recovery is generally in a tolerably exact ratio to the healthy condition of the patient. If he be of a sound constitution, the eye soon recovers from the effects of the injury, when the source of irritation is removed; if, on the other hand, he be of a delicate or strumous habit, he will certainly be the subject of a lingering attack of ophthalmia, commonly terminating in deposition of lymph into or across the pupil, and a consequent obliteration of that aperture. This, however, is less likely to be the case when the lens is removed by an early operation. Another important consideration consists in the great saving of time for the patient, a point of much interest to a labouring man. Had this case been allowed to proceed without the extraction of the lens, a long and tedious process of inflammation would have had to be combated, the wound of the cornea would not have healed during the continuance of the inflammatory action, and the patient must have lost many weeks of valuable time. I remember an analogous case, in which, on puncturing the cornea, three or four weeks after the receipt of the injury, the dissolved lens was forced through the wound of the cornea, as in the case now reported, so that it was evident no attempt at reparation had been made in that long period of time."

[We have examined this grooved needle, and think it may prove a useful instrument.] *Med. Times, Dec.* 27, 1845, *p.* 255.

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# MIDWIFERY,

AND

# THE DISEASES OF WOMEN,

184.—SUGGESTIONS REGARDING THE ANATOMICAL SOURCE AND PATHOLOGICAL NATURE OF POST-PARTUM HÆMORRHAGE.—By J. Y. Simpson, M.D., F.R.S.E., &c., &c.

[The whole question of extraction of the placenta in cases of placental presentation, as recommended by Mr. Kinder Wood, of Manchester, and lately by Drs. Simpson and Radford, seems to hang, in a great measure, upon the truth of the following arguments and facts, brought forward by Dr. Simpson. It is a subject of so much consequence to the lives of our fellow-creatures, that we have felt very diffident about advancing our own views of the subject, and have generally preferred giving the first authorities on both sides of the question, and leaving our readers to judge for themselves. The following interesting paper by Dr. Simpson, we copy entire from the Northern Journal.]

The non-occurrence of hæmorrhage from the uterine vessels, after the complete detachment of the placenta in ordinary parturition, is probably not explicable, as is generally imagined, upon the sole circumstance of the simple and absolute contraction that occurs in the uterine fibres after delivery. We know, from the observations of Gooch, Velpeau, Rigby, and others, that post-partum hæmorrhage sometimes supervenes when the uterus appears contracted and reduced to its usual size after delivery. On the other hand, numerous facts show that there is little or no tendency to hæmorrhage after the perfect expulsion of the placenta, although this simple and absolute contraction of the uterine fibres, be, at the time, so far prevented by the presence in utero of a full grown fœtus, as in those placental presentations in which, as occasionally happens, the after-birth is expelled or extracted before the child. When the child is born in ordinary labour, and the placenta happens to be retained from want of uterine contraction, hæmorrhage does not necessarily supervene. It is well known that Ruysch, William Hunter, and others, adopted, for a time, the practice of leaving the placenta in utero for hours and days till nature herself threw it off, and that they were at last forced to abandon this line of treatment—not because uterine hæmorrhage was liable to supervene, because the dead and retained organ was found to become putrid, and to give rise to symptoms of severe irritation and fever. Again, after the complete evacuation of the uterus in common parturition, and the total removal of the placenta, hæmorrhage does not necessarily supervene, though the uterine fibres are not in a state of firm contraction. We often find them alternately relaxing and contracting when after-pains supervene, and yet the general relaxation that is observable between the pains may not give rise to the slightest degree of flooding. Every practitioner has had occasion to watch with more or less anxiety, the uterus remaining of considerable size and softness for some time after delivery, and consequently with its fibres not firmly contracted, but without after-pains, and without hæmorrhage supervening. In the same way, in some cases of placental presentation after the placenta has become expelled, and while the child remains in utero, the labour pains have ceased; and still, notwithstanding this cessation, not only has no hæmorrhage followed, but on the contrary, the flooding that previously existed, has immediately ceased.

No doubt the occurrence, after the delivery, of great and decided atony in the whole muscular system of the uterus, does assuredly give rise to post-partum hæmorrhage. But if I may judge from my own observations, I would venture to remark, that the morbid condition which is most frequently and earliest seen in connection with post-partum hæmorrhage, and which is specially remarkable in cases where the flooding is more enduring than usual, is a state of irregularity, and want of equability in the contractile action of different parts of the uterus—and, it may be, in different planes of the uterine fibres—as marked by one or more points in the organ feeling hard and contracted, at the same time that other portions of the parietes are soft and relaxed—and by the contracting and relaxing fibres, slowly but frequently changing their relative situations.

Upon the same principle, I believe that in attempting to prevent or remove the morbid condition leading to post-partum hæmorrhage, when it is functional in its nature, and not connected with any organic or traumatic causes, we ought to endeavour to produce not merely a certain degree and amount of uterine contraction (the great and primary practical point to which we always justly look), but also a certain equability and uniformity of contraction. At the same time I would repeat, that this part of the subject, like the whole question, of the manner and means by which hæmorrhage is prevented from the exposed uterine veins, after every case of ordinary labour, stands, in my opinion, in need of new, careful, and extended investigations. I have, however, at present, no desire to encounter so wide and complicated an inquiry; and shall content myself with stating in reference to the subject, the following suggestions.

First, Uterine hæmorrhage, after the separation of the placenta in any of the stages of labour, is not arterial in its character. The utero-placental arteries are numerous, but so long and slender as to become readily closed; 1, By the tonicity of their coats; 2, by contraction of the uterine fibres upon the course of these vessels themselves as they pass through and amid the uterine structure; and, 3, and principally, by the changes in their tissues produced by the mechanical rupture of their coats—torn arteries being little if at all liable to bleed—and the placenta being separated by a true process of avulsion.

Secondly, Hemorrhage, therefore, under the conditions supposed, is *venous* in its source and nature. Further, it is specially important to mark that it is a venous hemorrhage by retrogression. The forward course of the uterine and utero-placental venous circulation is from the dilated maternal capillaries or cells of the placenta towards the periphery of the uterus, and the ovarian and hypogastric venous trunks. In uterine hemorrhage, the blood that escapes, instead of flowing onwards, regurgitates backwards into the uterine cavity.

Thirdly, The mechanism by which, after the separation of the placenta, this retrograde course of the venous circulation towards the cavity of the uterus, so as to lead to hemorrhage, is prevented, is probably of a compound character, or is effected by different means. Each of these means may be more or less efficient under different circumstances and at different times.

Fourthly, The most powerful of these preventive measures consists in the uniform and regular contraction of the uterine fibres. By this contraction the canals of the supplying arteries are constricted, and the venous tubes or sinuses, which more immediately yield the discharge, are directly compressed. The facility of this compression of the sides of the veins and the consequent diminution of their cavaties is promoted by the naturally thin, flattened form of their canals, and by the fact that the proper contractile tissue of the uterus forms their second coat—the uterine veins consisting of the usual lining membrane of the venous system placed in direct contact with the muscular tissue of the uterus. At the same time, it is to be recollected, that there seems to be often no direct relation between the degree of uterine contraction and the degree of tendency to hemorrhage, for, as we have just seen—1. No hemorrhage may be occasionally observed after delivery, though the uterus is not contracted to its usual degree:—and 2. It may be present when the uterus is apparently well contracted. But 3. There are, according to most anatomists, few or no contracting fibres in the structure of the os and cervix uteri; and certainly after delivery I have generally, if not always found it remaining open, gaping, soft, and flaccid, even when the proper cavity of the uterus above felt shut and contracted, and its parietes hard and firm. Still, when the placenta is attached to the surface of this uncontracting portion of the uterus, as in placenta-prævia, hemorrhage is not common after its separation, unless some laceration of its vessels has occurred. Here we have post-partum hemorrhage prevented, without the contractile mechanism generally considered necessary for its avoidance being almost in existence. And 4. In cases of spontaneous or artificial extraction of the placenta before the child in some placental presentations, and twin labours, the placental mass may be completely separated, and the uterus still remain distended by the presence of a child in its cavity so as to prevent much contraction of its fibres, without hemorrhage occurring. The venous trunks running to the uterus are not supplied with valves; and under the above and other circumstances, by what means in addition to, or in substitution of the contraction of the uterine fibres, does nature prevent the retrograde flow of venous blood into the uterine cavity—or in other words, by what means does she prevent uterine hemorrhage?

Fifthly, The structure and mutual relations of the venous sinuses of the uterus seem calculated to obstruct and prevent such a retrograde flow of blood in their tubes as to cause hemorrhage. The uterine veins are large,

but of a compressed, flattened form, and arranged in several planes or floors one above another in the uterine walls. On examining these veins in several pregnant uteri, by dissecting them from the outer or peritoneal surface of the organ, downwards towards the mucous, I have found the following arrangement:—Each venous tube gives off numerous communicating branches to the veins of its own plane or floor, by a set of lateral foramina. When, however, a venous tube of one plane comes to communicate with a venous tube lying in the plane immediately beneath it, the foramen between them is not in the sides but in the floor of the higher or more superficial vein, and the opening itself is of a peculiar construction. Looking down into it from above, we see the canal of the vein below partially covered by a semilunar or falciform projection, formed by the lining membrane of the two venous tubes, as they meet together at a very acute angle—the lower tube always opening very obliquely into the upper. In the folds of these falciform projections, the microscope shows the common contractile tissue of the uterus. Do these semilunar or falciform projections, and the oblique communications of the lower with the higher planes of veins allow the normal flow of venous blood from the deeper to the more superficial veins of the uterus, while, after the placenta is separated, they prevent that abnormal or retrograde flow of it from the more superficial towards the deeper-seated venous tubes which would produce hemorrhage? Here, I suppose it possible, that these falciform processes may act upon the same principle as the Eustachian valve, but in a less perfect manner, while, by the obliquity of the communications between the different planes of veins, it may be that blood does not so readily retrograde into the deeper vessels in the same manner as urine does not retrograde into the ureters from the bladder, in consequence of the oblique opening of the former into the latter. Do the uterine fibres seen in the venous falciform processes tend to aid this valve-like mechanism by diminishing, under contraction, the apertures between the different planes of veins?

Sixthly, One cause contributing to prevent hemorrhage after the total separation of the placenta, is the abstraction from the uterine vascular system of the derivative or sugescent power of the maternal circulation in the placental cells, and the consequent tendency of the blood to flow in the more direct and freely communicating channels that exist between the uterine arteries and veins. Besides, the general and direct forward current of the blood along the course of these large uterine veins diminishes, and, in a measure, destroys the tendency which it might otherwise have either to flow backwards, or to escape by any existing lateral apertures of the vessels.

Seventhly, Among the other remaining means by which hæmorrhage is more or less prevented after the detachment of the placenta, I may mention: 1, The occasional presence of tufts of fœtal vessels left in the orifices of the uterine veins, and forming not only immediate mechanical obstacles, but nuclei for the ready coagulation of the blood; 2, The formation of coagula in some of the collapsed venous tubes and orifices; and, 3, The presence for some hours, or even days, after delivery, of the collapsed decidua over the apertures seen in the veins on the interior of the uterus. To these few and imperfect suggestions I am desirous to add one remark. Several of the natural means of arresting uterine hæmorrhage that I have spoken of, admit of extended anatomical examination being applied to their more perfect investigation; and some of the observations that I have ventured to offer, may be yet proved or disproved, by being tested by direct experiments with vascular injections thrown into the dead body.

*Northern Jour. of Med., Jan.*, 1846, *p.* 1.

[It will be interesting here to give some of the remarks of Weber, on the structure of the placenta, as given in a note by Dr. Willis, at page 201, of his Translation of Wagner's Physiology; as we suspect that one great reason why this subject has not been generally understood, is, that practition-

ers have not paid sufficient attention to the peculiar anatomical structure of the placenta, and its connection with both the mother and child. These views of Weber are in accordance with those of Eschricht, of Copenhagen. It will be seen that, in their opinion, although there is an intimate connection between the uterine and placental vessels, there is no real communication, prolongations, or folds of both the chorion and decidua being placed between each vessel, so that it is impossible for blood to flow from the mother through the placenta without laceration of the maternal vessels, either in the substance of the placenta, or at the point where these vessels leave the surface of the uterus. It is a common error to suppose that the placenta is entirely a fœtal production, whereas it is the joint work of both fœtal and maternal blood-vessels. There are, perhaps, as many maternal as fœtal vessels, and, notwithstanding an opinion of Dr. Ashwell's to the contrary, we suspect that we could not even introduce a trocar and canula into the substance of the placenta, so long as any portion remains a medium of communication between the fœtus and mother, without, as it were, tapping the mother as well as the fœtus. We should thrust the tube through both sets of vessels, which (without any real communication except by laceration) constitute the placenta something like a large sponge, forming the terminus of the maternal vessels on the one hand, and the fœtal on the other; each terminating by numberless loops or doublings, the maternal carrying arterial blood one way, and returning venous blood the other, and the fœtal in the inverse direction.

It is on the understanding this anatomical structure that we can so easily explain the views of Dr. Simpson, and probably it has been from the want of this explanation and reference to the peculiar cavernous or spongy structure of the placenta, that his opponents have not yet agreed with him. When we know that a great portion of the placenta is thus actually formed by vessels shooting from the surface of the uterus as well as by those from the fœtus, we can easily see how a small laceration of the placenta may actually be draining blood from the mother, without even the slightest separation of the placenta from the surface of the womb; and how utterly useless all remedies to stop the flow of blood must be, so long as the placenta remains attached to any part of the surface of the uterus, unless the ruptured vessels be plugged up with coagulum, which in due time they will generally be. When we understand the subject in this way, we shall feel the full force of Dr. Simpson's arguments, and when his practice is pursued with discrimination, we believe it is correct, however we may differ from him in some of his explanations. In the note of Dr. Willis's, above referred to, Dr. Weber says that Eschricht agrees with him in the following particulars:]

1st. That the arteries and veins of the uterus, the channels of the mother's blood, penetrate in great numbers into the placenta, and are distributed throughout its substance in such wise, that every one of its minutest lobules has a canal carrying the blood of the mother, and so comes into contact with the vessels in which the blood of the embryo is flowing. Here we both differ from Seiler, who believed himself authorised to conclude that no vessels from the mother penetrated the placenta, but that the maternal vessels only came into contact with the surface of the placenta, where it was bounded by the uterus. 2nd. The umbilical arteries of the embryo divide, in the manner of a tree, into very numerous and minute branches, which finally turn round, forming loops and anastomoses, and again collect into larger and fewer branches, which at length unite into a single trunk, and form the umbilical vein. Nowhere do the maternal and fœtal vessels anastomose; nowhere is there any transmission of blood from the one class of vessels to the other; nowhere do we encounter open-mouthed terminations of vessels. 3rd. The whole placenta, and therefore every individual lobule entering into its structure, consists of two distinct parts, the one a continuation of the chorion and vessels of the embryo, the

other a continuation of the membrana decidua and vessels of the uterus. From the chorion, for instance, dendritic processes or elongations are sent out, which in small ova about a month old are so small and simple, that they are called villi, but which grow by and by into large and numerously divided stems and branches.

Into each of these dendritic processes of the chorion there penetrates a branch of the umbilical artery, and a branch of the umbilical vein. Both vessels divide into branches in the same manner as the process of the chorion in which they run. At the extremities of the branched processes of the chorion, the divisions of the umbilical artery come together in loops or coils; these coils, however, are for the most part not simple; the same capillary winds several times hither and thither, and forms several loops; loops are also frequently formed by the anastomosing of two neighbouring capillaries. From these convolutions and loopings of the capillaries, little thickenings or enlargements of the extreme divisions of the processes of the chorion are produced. Each particular trunk, with its divarications of the shaggy chorion, forms a lobe or lobule of the placenta, which is covered by the tunica decidua. To this investment many of the terminal branches of the chorion will be found to have grown. It is in the spaces between the divarications of the chorion, that those vessels run which transmit the blood of the mother, and which are prolongations of the uterine arteries and veins; they penetrate in this way to every the most minute lobule of the chorion. 4th. The object of this structure seems to be that the minute, convoluted, greatly elongated, and extremely thin-walled capillaries, in which the blood of the fœtus is circulating, may be brought into the most intimate contact possible, with the larger but everywhere excessively thin-walled canals, in which the blood of the mother is flowing, that the two currents, without interfering with each other's motion, may pass each other to as great an extent as may be, with nothing interposed but the delicate parietes of each set of vessels, that they may exert an influence one upon another, the blood of the mother abstracting matter from that of the fœtus, and the blood of the fœtus taking, in its turn, matter from that of the mother. Eschricht differs from me in this, that he believes the uterine arteries and veins distributed to the placenta are connected together by as delicate, or even a more delicate system of capillaries, as that of the umbilical arteries; and in such a way that two systems of capillaries, that belonging to the child to wit, and another to the mother, are brought into intimate contact. I, on the other hand, believe I have demonstrated that the uterine arteries and veins, once they have entered the spongy substance of the placenta, do not farther divide into branches and twigs, but immediately terminate in a net-work of vessels, the canals of which are of far too large diameter to permit them to be spoken of as capillaries, and of which the parietes are so thin, that they cannot be shown apart by the most careful dissection. This vascular rete, which connects the uterine arteries and veins with each other, completely fills the spaces between the branched divisions of the chorion, and the extremely thin parietes of the canals of which it is composed, insinuate themselves at all points into the most intimate contact with the branches and convoluted masses of the capillaries of the umbilical system of vessels. This network of vessels, however, with reference to the passage of the uterine arteries into the uterine veins, performs the same office as a rete of true capillaries, so that it may be regarded as a rete of collossal capillaries. Eschricht maintains that plicated processes of the decidua penetrate the placenta, and may be traced between the branched divisions of the chorion, furnishing the several twigs with a delicate investment, and that these plicæ are the supporters of a capillary rete, by which the uterine arteries and veins are connected in the placenta. I, on the other hand, maintain that the walls of the uterine arteries and veins, where they penetrate the placenta, consist of a very delicate tunic, a prolongation, as it seems, of the inner tunic of the vessels of the uterus, cov-

ered with a layer derived from the substance of the decidua; that the inner tunic of the blood-vessels lines the interspaces between the divisions of the shaggy chorion, and that the little masses of convoluted vessels or villi, which terminate the branches of the chorion, penetrate the canals which transmit the blood of the mother, and are bathed by it in their interior. In my mode of stating my views, I must, I fear, have left room for misapprehension, as I could perceive in the course of my conversation with Eschricht, that I had not been understood in the way I intended. I have not, I imagine, explained with sufficient clearness what I mean by villi that penetrate the vascular canals of the mother. This deficiency I take occasion to supply here. I do not, then, understand by villi entire stems of the chorion with all their subdivisions, as they appear when they are torn forcibly out of the placenta, but small projections or elevations that occupy these in points, or occur over every part of the stems and branches, and are formed by the terminal loopings and communications of the embryonic placental capillaries. Magnifying glasses are required to perceive these proper villi distinctly. In the second place I have said, "the vessels of the uterus that penetrate the placenta become wider when they have entered it. This expression is objectionable, at least in reference to the veins of the fully-developed placenta, and I would therefore recal it." Weber then goes on to describe the structure of the placenta particularly, comparing it with the corpus cavernosum penis s. urethræ, or with an ordinary sponge. "The fibrous tissue of the sponge," he continues, "corresponds with or represents the branching subdivisions of the chorion and their uniting medium derived from the decidua; the cavities and interspaces of the sponge, however, represent the passages in which the blood of the mother flows. None of the many tortuous arteries which penetrate the decidua, still dividing into branches, from the uterus, when they reach the placenta undergo any farther subdivision; they open at once into the spongy texture, and are lost as ordinary vessels. Neither do the veins show anything like division into branches; they all open like the arteries into the spongy substance of the placenta, by orifices larger or smaller. It is only as they are running in the investing decidua that they divide into a few branches. The spaces between the branched subdivisions of the chorion are thus kept filled with blood constantly poured in by numerous and large arteries, and regularly carried off again by numerous and capacious veins, so that it is perpetually renewed.

The placentas of all animals seem referable to two grand classes: "but the nourishment of the embryo appears in every case to depend on the subdivision of the fœtal and maternal blood into innumerable currents, the fœtal blood being, however, subdivided much more minutely than that of the mother, which pass each other through a great extent of tube, and are in contact through a like or still greater extent of surface, but always without the stream of the one interfering with that of the other, and without any admixture of the blood of the mother with that of the fœtus. These currents may, in fact, be separated from each other at every point, by parietes of extreme thinness, which, however, do not oppose all interchange of matters, these transuding or making their way through the delicate bounding membranes." Baer (Entw. S. 279) says, "By the growth of the vessels of the uterus into the decidua serotina, this is transformed into the placenta. That vessels pass from the walls of the uterus into the placenta, is a fact long known and admitted; but in regard to the form and mode of this passage or transference, opinions still vary. It was long believed, with Hunter, that they passed into cavities. In more recent times there appeared a growing disposition to regard these spaces as enlarged veins with extremely thin walls, a structure which is assigned to them among others, and particularly by E. Weber. Very lately, however, Dr. R. Lee has very emphatically insisted, that the great veins of the uterus ended open-mouthed on the inner surface of that organ, but that these openings were closed by

the substance of the tunica decidua, and that generally no other than vessels of very small calibre penetrated the decidua from the uterus.

Dr. Lee's paper, "On the Structure of the Human Placenta and its connection with the Uterus," will be found in the Phil. Trans. for 1832. This zealous inquirer has seen reason to alter his opinions there stated. He now admits that the maternal blood enters the cells of the placenta by the tortuous arteries in the decidua, and is returned into the uterine veins by oblique openings in this membrane. *Dr. Willis's Translation of Wagner, p* 201.

[We have given this long quotation on this interesting subject, as we think it will satisfy any one that Drs. Simpson and Radford are supported in their opinions by the anatomical structure of these parts, and if the reader will turn to p. 258 of Retrospect, Part XII., he will find that Dr. Simpson's views respecting the source of the hæmorrhage in placental cases are correct, and agree with the anatomical description of Weber and others.

It is from not clearly understanding the growth and formation of the placenta, that some of the opponents of Dr. Simpson have been led into error; and amongst the rest, with all due deference, we are compelled to name Dr. Ashwell, who, at p. 262 of Retrospect, Part XII., denies the correctness of Weber's views, and those of Dr. Simpson, and says—"It is, on the contrary, easy enough to show to the satisfaction of the most incredulous, the great openings existing in the lining membrane of the uterus, exactly opposite the attachment of the placenta, and which are covered by interposed decidua. Into many of these the tip of the finger may be inserted, while their course and extensive communications with the uterine sinuses, full of blood, is evident at a glance. Surely such an organization affords the clearest proof of the source of the hæmorrhage in placenta prævia. By some unfortunate accident the placenta and the intervening decidua are detached, and as the uterus is full of blood, there is no barrier to prevent its escape; in moderate amount if the detachment be slight, but excessive in quantity if the separation is considerable, and attended with excitement and hurry of the heart's action."

This opinion, as far as it goes, is perfectly correct, as the hæmorrhage may indeed arise from these open vessels, as well as from their continuations in the substance of the placenta. Dr. A. seems to forget that the maternal vessels do not terminate on the internal surface of the womb, but are continued into the placenta. He says, a little further on, that he tried to squeeze a quantity of blood from a detached placenta, and could only procure two or three ounces: this may have been the case, but the communication with the mother had been cut off, and hence the failure of his experiment. We do not exactly agree with Dr. Simpson, that the hæmorrhage in these cases is "venous hæmorrhage by retrogression;" we do not see that his explanation is necessary, and if this article had not occupied so much space, we think that we could give a sufficiently simple and satisfactory explanation, without supposing that the venous blood regurgitated or retrogressed.

We would humbly suggest that, in future, hæmorrhage from the uterus be divided into two kinds: 1st, Uterine hæmorrhage, when it arises immediately from the uterine surface; and 2d, Placental hæmorrhage, when it is derived from the uterus through the medium of the placenta. If these terms were adopted, we should better understand each other. We think that Dr. Simpson's explanation of "venous hæmorrhage by retrogression," is unnecessary, when we remember that the capillaries, which constitute the greater part of the maternal portion of the placenta, are what Weber calls "colossal capillaries," that is, as we suppose, as large, or even larger than the regular vessels which go to and form this vascular rete. The hæmorrhage, we suspect, is from the blood of these large capillaries, which is a mixture of venous and arterial, such as has in a great measure already imparted its oxygen to the blood of the fœtus.

We suspect again, that in these placental hæmorrhages, torn arteries and torn veins on the surface of the uterus have very little to do in the process. The blood from the mother continues to pass along the uterine arteries, which are yet uninjured, into the substance of the placenta, and down to its ruptured portion, where the blood of course finds a small or a large outlet, and continues to flow till, perhaps, the vessels are blocked up by coagula, or till the whole placenta (the medium of communication) is detached.

If we turn to Retrospect, Part XII., p. 258, line 33, we find Dr. Simpson says: "I believe with Dr. Hamilton and others, that the discharge issues principally or entirely from the vascular openings which exist on that exposed placental surface. These placental orifices are not, like the uterine, surrounded by contractile fibres capable of constricting them; they are in free communication with the general vascular system of the mother through the medium of the maternal vascular, or cavernous system of the placenta: and the blood in that cavernous system escapes readily from the exposed venous orifices on the surface of the placenta—that being, in fact, so far, its natural and forward course." With the explanation we agree, and can better understand it than Dr. S.'s late expression, "venous hæmorrhage by retrogression," although probably he means the same thing in both instances.

We are aware that some very interesting remarks have recently been published by Mr. Dalrymple, Mr. Goodsir (see Retrospect, Part XII., p. 270), and others, on the construction of the placenta, but we are not satisfied they have yet brought sufficient evidence to overturn the practical deductions of the foregoing parts of this article.)]

*Northern Jour. of Med., Jan.* 1845, *p.* 1.

[The opinions of the two Hunters on the construction of the placenta, and especially on its connection with the internal surface of the uterus, has lately been corroborated by Mr. Owen, in an examination of a case furnished by Dr. Lee. Mr. Copeman gives us an interesting paper on the subject, from which we take the following. Mr. Owen says,]

"Having carefully compared the Hunterian preparations with the results of my own examinations of the gravid uterus at the full period, I now believe they all fully bear out Mr. Hunter's general view: viz., that the maternal blood is diffused, by means of the tortuous arteries, into the spongy cellular substance of the placenta, where it bathes the capillaries of the fœtal circulation, and is returned by the oblique decidual adventitious sinuses and channels into the orifices of the uterine veins."

Dr. Rigby, in an excellent work on Midwifery (Vol. VI. Library of Medicine), quotes largely from the Hunters, and confirms their views. He says: "From these remarks, founded chiefly on the admirable observation of the Hunters, and repeated examinations which we have made with the greatest care and impartiality, it may be stated with confidence, that the placenta consists of two portions—a maternal and fœtal. The maternal portion consists of a spongy cellular tissue; and also of those trunks which pass through the decidua, and which form the communication between the uterine vessels and the placental cells; the fœtal part is formed by the ramifications of the umbilical vessels: 'that each of those parts has its peculiar system of arteries and veins, and its peculiar circulation, receiving blood by its arteries, and returning it by its veins; that the circulation through these parts of the placenta differs in the following manner:—in the umbilical portion the arteries terminate in the veins by a continuity of canal; whereas in the uterine portion there are intermediate cells into which the arteries terminate, and from which the veins begin."—*Hunter.*

In the 23d volume of the Medico-Chirurgical Transactions, p. 224, Mr. Bloxam gives an interesting account of a dissection of the uterus of a female who died about thirty hours after a most severe labour. From the observations he has made, he deduces the following conclusions, confirmatory of the fact of a vascular connection existing between the uterus and *the placenta*:—

1. That the blood enters the placenta through the short curling arteries of Hunter; and that although their size is insignificant compared with the venous system of the uterus, yet their relative number being greater, a full supply of blood is insured to the organ; whilst by the smallness of their calibre, they prevent the maternal circulation from expending its full momentum on the system of the child, under the accidental shocks, physical and mental, to which the mother is daily liable. 2. That these vessels ramify on the spongy tissue of the placenta, and are there in apposition with the extremities of the umbilical veins. 3. That it is highly probable that some of the properties of the maternal blood pass into the circulation of the fœtus by this means, and having fulfilled its functions in the fœtal economy, the residue is returned to the placenta by the umbilical artery. 4. That from the free termination of the umbilical arteries it transudes into the interstitial structure of the placenta; which is continuous with the semilunar apertures on its uterine surface. 5. That these apertures are applied to the openings on the internal surface of the uterus, and furnish the channel by which the blood, or its principles, are restored to the system of the mother.

In regarding the immense size of the apertures of the venous sinuses, one feels a degree of astonishment that hæmorrhage is not more frequent, and more fatal; but when it is remembered that the essential property of the uterine fibre, at the full term of gestation, is that of contractility, and that by the exercise of this property the orifices of the deeper-seated sinuses must be closed by the more internal layer of muscular fibres, inasmuch as these apertures are not placed on the same meridian, our surprise ceases. It is probable that, independently of this mechanical arrangement, the flow of blood from the more superficial openings may be arrested by the formation of coagula, a process for which the flocculent structure of the decidua seems highly favourable. *Med. Gaz.*, *May* 22, 1846, *p.* 896.

[The rules recommended to be observed by Dr. Radford, of Manchester, in these placental cases, are excellent and most judicious. He says,]

The practice of first detaching the placenta ought never to be adopted unless, 1st. The danger to the woman is so great from exhaustion as to render the ordinary plan of delivery by turning the child hazardous. 2nd. Where there exists some obstacle to the extraction of the child, either from distortion in the bones of the pelvis, or tumours connected with it, or in its cavity, but connected with the soft parts. 3rd. Where the child is dead.

[We ought always to turn and extract whenever the condition of the mother will allow it, since the detachment of the placenta long before the birth of the child is almost sure to destroy it. Dr. Radford adds:]

Before we undertake either the operation of turning or that of detaching the placenta, we should duly consider what is the condition of the cervix and os uteri. It is not my intention on the present occasion to enter into a detail of those cases which must be treated on the ordinary principles of practice, but enough has already been said to show that, in my opinion, they form the great bulk.

In the Provincial Medical and Surgical Journal, Jan. 22, 1845, I made the following observation:—"First. Then as neither delivery nor detaching the placenta ought ever to be attempted, until the cervix and the os uteri will safely allow the introduction of the hand, rest, the application of cold, but above all, the use of the plug must never be omitted in cases where they are respectively required." During the early months of pregnancy, the increase of size is mainly confined to the body and fundus of the uterus, so that the cervix presents downwards a characteristic stem-like projection. The change of development which this part of the organ undergoes during the latter months is gradually progressive, and presents an undilated and undilatable canal of greater or less length, according to the state of pregnancy, so that it is quite impossible to know whether the placenta offers itself first, before those changes of oviform expansion are produced upon it, either as the

result of a natural action, or of an abnormal change provoked by the excited contraction of the fundus and body. Then, under such an organic condition, would it be prudent, nay, would it not be rash on the part of the practitioner, and extremely dangerous to the patient, to adopt the practice of detaching the placenta?

The os and cervix uteri should invariably be dilated or dilatable when the placenta is to be detached. It ought to be already so open, or in a condition to be further opened to admit the hand safely to pass through it; there should be no contusions, no organic lesions resulting from the operation; safety should be our watchword. The hand is the only instrument by which the placenta should be detached, and, indeed, I hesitate not to state, that it cannot be safely and effectually separated by any other means. It has been asserted otherwise by a late writer, who says, that the finger, or an instrument analogous to that used by the late Dr. Hamilton, for the induction of premature labour, may be employed to effect this detachment. In those cases of unavoidable hæmorrhage which occur before the expansion of the cervix uteri, it would be quite impossible to force the finger along the cervical canal, and reach the edge of the placenta so as entirely to detach it, and in those instances which occur at the latter part of pregnancy or beginning of labour, with a rigid os uteri, or even with a dilatable state of this part, it appears to me to be out of the power of the operator with the finger alone to reach so far as the edge of the placenta. The circumference of this organ is well known when it is placed over the os uteri; its centre is not always in a direct line with the centre of the opening, but there is every variation in its position here.

But the attempt to detach the placenta with the finger appears to me to be a safe procedure, compared with the use of the metallic instrument abovementioned to effect this detachment, when it cannot be done with the finger. Can we imagine that a piece of steel can be passed through the os uteri, and adapt itself to the surfaces of the placenta and the uterus, in all the varied relations that the former observes to the latter? Can we depend on the delicate application of these means in reference to the uterine tissue? Can we effect a complete and uniform detachment of the placenta? Can we always be certain that the placenta is placed over the os uteri, when the parts are so rigid and contracted as to render such a plan necessary? I hesitate not to declare my opinion against the safety, propriety, or practicability of such an operation.

It has been estimated from statistical calculations, that there is one death in three of mothers in cases of placenta prævia; but this average, according to my experience, is far too great, the particulars of which shall, at a future period, be laid before the profession. Notwithstanding the alledged high rate of mortality, as the result of the ordinary treatment of placenta prævia, I have no doubt in my mind, that a most fearful preponderance of maternal and fœtal deaths will be produced, if the new plan of treatment suggested is followed.

[We think that these remarks are very judicious; there may be, however, cases in which Dr. Radford's advice could not safely be followed. For example, he says, "the os and cervix uteri should invariably be dilated or dilatable when the placenta is to be detached—it ought to be already so far in a condition to be further opened, to admit the hand safely to pass through it." We think that if this were the state of the parts, turning at once would probably be the best way to finish the case; but there are cases of imminent danger where the patient may be flooding to death, notwithstanding all measures we can adopt, and yet the os may not be in the dilated state described by Dr. Radford. We think that Dr. Simpson has not been understood; he says expressly in a paper which we gave in Retrospect, Part XII., p. 258.—"Dr. Lee seems to argue as if I recommended the artificial detachment of the placenta in all forms of placental presentation in which turning is at present adopted. On the contrary, I have ex-

plicitly mentioned it as a mode of treatment to be adopted when rupturing of the membranes is insufficient. and turning is either inapplicable or unusually dangerous. I believe it will be found, for instance, the proper line of practice in severe cases of unavoidable hæmorrhage complicated with an os uteri so insufficiently dilated and undilatable as not to allow with safety, of turning; in most primiparæ; in many of the cases in which placental presentations are (as very often happens) connected with premature labour and imperfect developement of the cervix and os uteri; in labours supervening earlier than the seventh month; when the uterus is too contracted to allow of turning; when the pelvis or passages of the mother are organically contracted; in cases of such extreme exhaustion of the mother as forbid immediate turning or forced delivery; when the child is dead; and when it is premature and not viable.

The operation of turning and artificial delivery, in unavoidable hæmorrhage. with the os uteri imperfectly dilated, would, from these and other cases, appear to be more deadly than any operation that is deemed justifiable in the whole circle of surgery. It is more mortal even than ovariotomy. I believe, on the other hand, that in the above and similar cases, by the introduction of a finger, or of a common sound or bougie (such as Dr. Hamilton employed when the os uteri was still shut, and in order to separate the membranes for some inches from the cervix, in order to induce premature labour), the placenta might be readily and completely detached—the attendant bleeding in this way arrested—and the labour subsequently allowed to proceed to a natural and safe termination, if it were a head or pelvic presentation. And if the child were placed transversely a more safe and proper period could be waited for, and selected for the version of it.

The following cases, illustrative of this mode of practice, have lately been published among others. Dr. Reid reports an interesting case. The patient, Hannah Smith, æt. twenty-three, a very weak and emaciated woman, who was advanced to about the middle of the seventh month of pregnancy. Two months before she had had profuse hæmorrhage, and the flooding had again recurred. Dr. R. observes:]

Flooding now took place, and continued for about an hour, when the placenta was expelled; the hæmorrhage immediately ceased, and there was no recurrence of it at any time after this. *Med. Gaz., Nov.* 28, 1845, *p.* 1324.

[In a case of this kind Mr. Houghton observes:]

The placenta was not over the os, but close to its edge. As the hæmorrhage continued after the discharge of the "waters," and as the os was so high up as only just to be reached, the ergot seemed indicated, and it produced a favourable progress till eleven, a.m., on the 17th, up to which time I trusted she would be delivered by the natural process, as the head descended slowly, and the hæmorrhage gradually ceased. At this time symptoms induced me to repeat my examination, when I found the placenta almost plugging up the os. This, and the other symptoms, proved that there could now be no doubt that immediate delivery was imperatively called for; but the firm (hour-glass?) contraction of the uterus on the child, offered a serious obstacle to an easy and speedy delivery; and as the hæmorrhage still continued, I determined to detach the placenta; as I proceeded with the detachment of the placenta, the hæmorrhage immediately and entirely ceased, and did not recur. Might delivery have been left to nature, after the detachment of the placenta? From subsequent reflection, I think that very probably it might; for the bleeding never recurred, and I conceive that delivery by the natural process would not have made a more serious demand upon her strength, than the painful and tedious operation of turning. At the time, however, and under the urgent circumstances, I feared to leave the woman undelivered longer than I could help; as, at the time, the loss of a very small quantity of blood might have turned the scale against her.

I consider the detachment of the placenta to have been a most important

step in this case, as it put a complete stop to the hæmorrhage, by which life began to be threatened; and I am disposed to think that had delivery been effected in the ordinary way, and had the hæmorrhage continued, as it most probably would have done during the operation, that death might have resulted. I, for one, feel thankful to Drs. Radford and Simpson for having called our attention to the propriety of detaching the placenta; and I believe that in placental presentations, where turning would be found impracticable, or very difficult, or in which the balance is so nearly drawn as to render immediate arrest of the hæmorrhage important, the detachment of the placenta will be found to be of great service.

*Lancet, Jan.* 24, 1846, *p.* 97.

[Mr. Tweed, jun. relates a case as follows: The patient had been in labour an hour and a half before he was called to see her; there was a profuse hæmorrhage during each pain; she was becoming very faint. He says:]

On examination per vaginam, the uterus was found high up, the os uteri dilated to about the size of a shilling, thick and rigid; passing the finger within the os, the placenta could be distinctly felt, attached immediately over it; each contraction of the uterus gave rise to a gush of blood. I immediately plugged the vagina. At the end of two hours, the plug being removed, the os uteri was found less rigid, thinner, and dilated to the size of a crown piece, each pain forcing the presenting portion of the placenta partly through; as far as the finger could reach, no adhesion of the placenta could be detected. The hæmorrhage was now much diminished; in fact, it had almost entirely ceased. Dr. Murphy, who now kindly saw the case with me, advised again the plugging of the vagina, and if hæmorrhage returned to any extent, to introduce the hand, and turn the child immediately. Two hours elapsed, at the expiration of which the plug and placenta were both expelled. No further hæmorrhage occurred; the head of the child, with one hand, partly protruded through the os uteri at each pain. I now allowed the labour to proceed naturally for about an hour: the pains then becoming rather inefficient, two doses of the secale cornutum were administered, and the birth of a still-born child took place, exactly an hour and a half after the expulsion of the placenta. The uterus contracted firmly, and the patient is doing well. *Lancet, Jan.* 3, 1846, *p.* 9.

[Mr. Brown relates another case. His patient was suffering from the escape of large quantities of blood at each pain, and on examination, he found the placenta presenting, with the os uteri, the size of half a crown, and extremely rigid. He describes his treatment of the case as follows:]

Accordingly, without the least difficulty, I, with the forefinger of my right hand, separated the entire placenta from the uterine surface, and almost immediately the hæmorrhage ceased. The pains still continuing, and the os uteri yielding to the pressure of the placenta, the latter was protruded into the vagina; but now uterine action gradually diminished, and shortly afterwards was entirely suspended. During three hours, my patient remained quite free from pains, nor did the slightest hæmorrhage take place during that period. At the expiration of that time, finding the head presenting, and there being no obstacle to the exhibition of the ergot of rye, I administered the usual dose, and the uterus speedily resumed its wonted parturient functions. In a few minutes, a seven months' fœtus was expelled, followed by the placenta, which had been pushed by the child, in its passage, into the bottom of the sacrum. Judging from appearances, the child had been dead upwards of forty-eight hours. These are the leading facts of the case. Like the majority of my medical brethren, I have a natural objection to desert old and well-established rules of practice, for novel, and, what might be considered dangerous innovations; but this case, being in several respects peculiarly suited for the adoption of the new plan, I considered myself justified in testing the validity of Dr. Simpson's views, and so far as

one case can confirm what he has advanced, I think the preceding worthy of the attention of your numerous readers, supporting as it does those opinions.
*Lancet, Dec.* 27, 1845, *p.* 694.

[Mr. Goddard also gives us a case, which was about seven months advanced in pregnancy, when, on rising from bed, she was seized with severe pain, the membranes ruptured, and hæmorrhage commenced. The os uteri was undilated and rigid, and the funis presented; there was no pulsation in it. In four hours' time, Mr. Goddard observes:]

The os uteri was now more dilated and less rigid, with a considerable segment of the placenta projecting into the vagina. As, however, the uterine action was still feeble, the hæmorrhage but trifling, and the patient's spirits and strength being good, with an unblanched countenance, I determined upon a further delay. I, therefore, took my departure, with a distinct understanding that I should be apprised as soon as any emergency arose. About half-past nine o'clock, p. m., I received an urgent summons to attend. On my arrival, the placenta had just been expelled, and both arms and one leg of the fœtus were protruding through the os externum. In this state of things, the obvious course was to bring down the inferior extremities, an object I was preparing to accomplish, when a violent pain came on, which suddenly effected the delivery without any alteration having occurred in the presenting position of the child. The hæmorrhage entirely ceased on the expulsion of the placenta, and the patient experienced an uninterrupted and a rapid recovery. It is almost needless to add, that the child, apparently of about seven months' growth, was dead.
*Lancet. Dec.* 13, 1846, *p.* 645.

[On this subject, Mr. John L. I'on says:]

Every practitioner who has had much experience in these matters will agree with me in opinion, that the unyielding state of the uterine orifice forms the essential obstacle to the immediate delivery of the patient; for we are generally summoned to these cases on the first appearance of hæmorrhage before nature has been sufficiently excited to make any effort to expel the contents of the organ. Such being the case, any measure calculated to arrest the hæmorrhage, to produce expulsatory efforts, and consequent development of the uterine orifice, must, in the best manner possible, accomplish the objects and intentions we have in view. This, then, the plug, or tampon, first proposed and adopted by M. Leroux, and subsequently so particularly insisted on by the late Professor Davis, effects in an eminent degree; but to do this it must be applied effectually: in short, the directions so fully laid down in his work, and recently quoted by his son, Dr. J. H. Davis, in the Lancet, must, to insure success, be carried out most amply and completely; unless it be employed at the time, and in the manner and form therein described, it will assuredly be attended with an unfavourable result; when so used, it can hardly fail of obtaining the end desired. It not only acts as an effectual plug to the hæmorrhage, but from its mechanical irritation, never fails to excite the uterus to action; for this alone it strongly recommends itself to the notice of the profession, and is a safer and better mode of practice than that so recently recommended by Drs. Simpson and Radford. *Ibid, Dec.* 13, 1845, *p.* 644.

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185.—CASES OF MIDWIFERY IN WHICH GALVANISM WAS APPLIED.—By Thomas Dorrington, Esq., Surgeon to the Manchester and Salford Lying-in Hospital.

[In a paper read before the Manchester Medical Society, in February last, Mr. Dorrington called attention to this powerful agent in certain obstetrical emergencies. He considers that sufficient attention is not paid to the danger the child is exposed to in those cases of placenta prævia, where the placenta is extracted before the child, and that the old methods of rup-

turing the membranes, turning, and the plug, are sufficient in the majority of cases. He says]

The separation of the placenta prævia before delivery is justifiable in two sets of cases only; the first is where we have satisfactory evidence of the death of the child, or, what is equivalent, where organic alterations in the hard and soft parts have so lessened the diameters of the passages, as to compel us to adopt craniotomy to terminate the labour; and the second is where the woman is so exhausted as to be unable to bear the shock of delivery, the hemorrhage still continuing, or if not continuing, most likely to recur. It is obvious from this, that although most valuable in its proper place, the treatment alluded to can be very rarely required: whereas, the application of galvanism, which has been lost sight of in the discussion, is serviceable in a number of cases which the actively engaged obstetrician is frequently meeting with. I may premise that the instrument used by me in the following cases, was the electro-magnetic apparatus of Messrs. Abraham and Dancer, of this town, with Dr. Radford's additional vaginal conductor.

[M. Dorrington then relates a case of internal hemorrhage during labour. The pains had subsided, the os uteri was very rigid, and only the size of half a crown, and the uterus quite lax; there were all the symptoms of exhaustion from hemorrhage, with only the escape of about a pint of blood externally. Half a drachm of laudanum was immediately given, and a bandage applied, and then half a drachm of secale cornutum; in about twenty minutes the ergot began to act, and the child's head bore down on the os uteri; between the pains, however, the uterus was very lax. Dr. Radford was consulted, and it was concluded that to deliver in this case would be certain death. His plan of applying galvanism was adopted, in order to check the flooding, and thus allow an opportunity of getting nourishment into the patient. Mr. Dorrington thus speaks of the process:]

We applied one conductor of the electro-magnetic apparatus to the os uteri, and the other to the abdominal parietes over the fundus uteri. The woman immediately began to complain that we were cutting her, and the uterine action came on at once. After having used the remedy a few minutes, we desisted, and had great pleasure in finding that the tonic contraction of the uterus had been called into play. We again applied the galvanic shocks and currents, and the uterus immediately responded to the applications—strong contraction at once taking place, and the woman complaining of cutting pain. In about twenty minutes after its first application we finally ceased to use it, so firm a state of tonic contraction having been induced that we considered it safe to leave the woman, with orders that beef-tea, broth, and eggs beaten up with milk, should be given her at intervals, and a teaspoonful of brandy in a little water, occasionally. An abdominal bandage was kept firmly applied. When we made a vaginal examination, we found the head bearing down on the os uteri with a much greater degree of pressure than had existed before the galvanism was applied, and we left with a firm conviction that the galvanic treatment had been of most essential service in this, the first case in which Dr. Radford's new plan had been tried in the human subject.

[The flooding ceased, and in six hours and a half after galvanism was applied, labour pains set in, and in four hours afterwards, the labour was completed. This was on the 27th of September, and the next day she was very well, but sank and died on the 1st of October. The difference in the length of time in inducing uterine contraction by ergot and galvanism is well exemplified in this case; by the former it was from twenty minutes to half an hour; by the latter it was instantaneous. Mr. Dorrington also gives another case where galvanism was applied, in which hemorrhage occurred before labour. The patient, while stooping, suddenly lost two or more pints of blood, when she immediateiy fainted and vomited. Galvanic shocks were applied in the direction of both the axes of the pelvis. Mr. *Dorrington* observes]

The effect on the uterine fibre was most marked, the firmest tonic contraction occurred the moment the organ was stimulated, and when the conductors were finally removed, a good tonic state of the organ existed, a fact which was proved both by its hardness to the touch when examined through the abdominal walls, and by the head being in firm apposition with the internal surface of the os uteri. The constitutional effect upon the woman was very serviceable, for it acted as a general stimulus, rousing her up, and making her, to use her own words, "feel better than she had done for months." The pulse was 98, and stronger, and her face much less pallid. I ordered her to have an abdominal bandage put on, and to lie on her back to counteract the anterior obliquity of the uterus. About twelve, p.m., nineteen hours after the galvanism was applied, labour commenced without any further hemorrhage having occurred, and terminated in about two hours and a half in the birth of a male child, which was living. The placenta was expelled, along with four or five coagula as large as the closed hand, in a quarter of an hour afterwards. The woman recovered well.

[In another case, where the patient had arrived at the eighth month of pregnancy, and was suffering from the constant oozing away of blood from the uterus, the galvanic current was made use of. On examination per vaginam, Mr. Dorrington found a quantity of coagula in this canal, and he adds,]

Upon carefully removing these, I found the os uteri oval in shape, dilated to the size of a penny-piece, tolerably dilatable, and almost entirely filled up by the placenta. I could just feel the membranes anteriorly, and to the left side of the uterine orifice, and I ascertained that they were unruptured, and that the head presented. There had been occasionally slight labour-pains since last night; the fœtal heart was audible just below the umbilicus. I prescribed quiet and cool regimen. At half past one, p.m., Dr. Radford, Mr. James Kenworthy, and Mr. Runcorn, saw her in consultation with me; there was still a slight draining discharge, and the other circumstances much the same as at my visit earlier in the day. We thought the case a favourable one in which to try the experiment of delivering the child without turning, by means of the uterine action induced by galvanism, combined with artificial rupture of the membranes. At a quarter of two, p.m., we applied the galvanic conductors in the usual way, and good strong uterine action set in at once. In about ten minutes I ruptured the membranes with Holmes' stilette, and we continued the use of the galvanism till twenty minutes past two, p.m., by which time the pains began to come on spontaneously at intervals, and the placenta had fallen down to a considerable extent into the vagina; the hæmorrhage was extremely slight. At three, p.m., we left her, the labour-pains being good and regular, and the fœtal heart still audible. We ordered her to lie on her back, with a little inclination toward the left side, as there was right anterior obliquity of the uterus, and the child's head was a little too much inclined to the left side, and too far forward over the pubes.

At five, p.m., Dr. Radford and myself returned, and found that very little change had taken place since we left. The uterine action was not so strong as it had been two hours before, and there was no hæmorrhage. We reapplied the galvanism, using a greater power, and Dr. Radford carefully dragged the os uteri into the axis of the vagina, for we thought that the obliquity of the organ prevented the head from entering the pelvis. In an hour there was a decided advance; the head had descended into the brim of the pelvis, and was dilating the os uteri rapidly, and there had been no further flooding. The placenta continued to descend more and more as the labour progressed, preceding the head for some time, and indeed when the child, which was a female, was born, its most depending portion was protruded from the os externum before the head; so that the child passed over the half-detached placenta along the vagina. Of course, as so great a separation of the afterbirth had occurred, the child was born dead, though the fœtal heart was

audible till half an hour before its birth. The placenta came away immediately after the child, the labour being entirely terminated at twenty-five minutes to seven, p.m. The woman recovered rapidly, and without a bad symptom. This case, so far as the life of the child was concerned, would probably have terminated in the same way under any plan of treatment, since the placenta would doubtless in any case have become detached to a great extent from the uterus before its birth.

[We cannot quite agree with Mr. Dorrington in this opinion; we think there was nothing in this case to prevent the hand being introduced and turning accomplished before the death of the child. We give the case chiefly to show the effects of galvanism, but we should be very cautious how, under such circumstaces, we delayed delivery when the os uteri was sufficiently dilated or dilatable to allow of active interference. Both this practice, and that of extracting the placenta, may evidently be liable to abuse, while the life of the child will be sacrificed.]

*Prov. Med. and Surg. Jour., March* 11, 1846, *p.* 105.

[In a case of twins, the first child was expelled by the uterine efforts in four hours after labour set in. The uterus was inert afterward, and in four hours Mr. Dorrington saw the case. He says.]

I considered it a good opportunity to ascertain the value of Dr. Radford's galvanic plan in renewing uterine action, so I made the necessary arrangements. In about an hour, Dr. Radford and myself, in the presence of my friend, Mr. Nursaw, and my pupil, Mr. William Black, proceeded to apply the remedy. The effect was immediate; strong labour-pains coming on, and continuing while the galvanic circle was complete. The woman cried out that she had pain similar to what she supposed might be produced by "forks being thrust into her belly." On examining, per vaginam, the membranes were found to be tense and protruding into the passage, and the os uteri was fully dilated. After the galvanic circle was broken, and the intervallic contraction thereby induced had gone off, it was remarkable to observe that so great a degree of tonic uterine action existed, that the amniotic bag could no longer collapse, but remained tense in the vagina, as it does at the height of a pain in normal labour. In the course of about half an hour the intervallic uterine action was so completely excited that we ceased to apply the galvanism; and during a pain Dr. Radford ruptured the membranes, when the foot was found presenting. I now took charge of the case, and in about a quarter of an hour, with the assistance of slight traction, a very small female child was born alive. We applied a few slight galvanic shocks to its chest, as the respiration was feeble, with a very good effect. The placenta, which was single, came away in about twenty minutes, with less discharge than is usual in twin cases.

The mother recovered well and rapidly; but the second child, which was extremely puny at birth, died of convulsions in four or five days. This case would probably have terminated by using the ordinary means, viz., abdominal friction and pressure, artificial rupture of the membranes, or the use of the ergot. It was, however, thought to be a favourable opportunity of testing the power of galvanism in cases of uterine inertia, Dr. Radford having suggested its use in similar cases in his lecture. It answered perfectly, but I should not myself have recourse to it again in such cases, till I had tried milder methods, because it is unquestionally very disagreeable and painful to the patient. I am of opinion that, under most circumstances, the ergot should be tried in uterine inertia in preference to galvanism, but where the os uteri and soft parts are rigid, or where the circulation in the child is feeble, as indicated by auscultation, the latter is to be preferred: and for this reason, that you can perfectly regulate its effects, whilst you cannot those of the ergot. Of course, in many cases, abdominal frictions and pressure, and the artificial rupture of the membranes, where the os uteri is in a state to justify it, are sufficient to induce uterine action, without the use either of ergot or galvanism.

[Mr. Dorrington also relates a case in which he made use of galvanism for the induction of premature labour. In consequence of a contracted pelvis, it was considered advisable not to allow the patient to go on to the full term of gestation. A sponge tent was first introduced, but as it did not answer, Mr. Dorrington proceeded to pass a galvanic current through the uterus, in the presence of several medical gentlemen; the uterus became hard and pain was induced, which lasted only during the application; but Mr. Dorrington states that:]

In about eight hours and a half after the use of this agent, the membranes ruptured, little or no dilatation of the os uteri having occurred.

April 3rd. About forty-eight hours after the application of the galvanism, I made a vaginal examination, but there was no dilatation of the os uteri. On making an abdominal exploration, I discovered the head of the child at the fundus uteri. In about three hours after I saw her, labour came on, and the child presented with the breech. The case went on well so far as regards the action of the uterus, but the child was born dead after a labour of about nine hours' duration. Mrs. Mills, an experienced midwife, who had charge of the case, informed me that she examined the funis as soon as it came within reach, but she could detect no pulsation in it. I examined the infant and found the face purple from congestion, and the nates and scrotum much ecchymosed. The placenta came away in an hour after the birth of the child. The woman suffered from a severe attack of menorrhagia about twelve days after the birth of the child, which yielded to ordinary treatment, and the use of the plug.

The results of the application of galvanism in this case were more unsatisfactory than in any of the others. Indeed, I do not think that it induced labour directly, after all. This was the direct consequence of the rupture of the membranes, which, however, was doubtless caused by the tonic contraction of the uterus induced by the galvanism—I say tonic contraction, because she experienced no pain previous to the discharge of the liquor amnii—so that, probably, had the membranes been strong enough to resist the pressure to which they were subjected, and this might easily have been the case, sufficient uterine action would not have been excited by galvanism to establish labour. The galvanism failed, too, in the object for which it was chosen, viz., the induction of labour, so gradually and in so similar a manner to that in which it comes on spontaneously, that the membranes might remain unruptured until full, or, at any rate, considerable dilatation of the os uteri had taken place. We must admit that the ordinary method of bringing on premature labour by rupturing the membranes is open to objection, on the score of the difficulties which an early discharge of the liquor amnii may cause if the presentation is preternatural; and that such is more likely to be the case in a premature than in an ordinary labour Dr. Merriman has satisfactorily shown. The use of the sponge tent and galvanism were both supposed by Dr. Radford and myself to offer the chance of avoiding the accident above alluded to, but so far as this case is concerned our expectations were not fulfilled. If further experience should afford more satisfactory results in this particular, galvanism will have a decided advantage in these cases over the old method; but should it not do so, I should prefer the artificial rupture of the membranes both on account of its greater simplicity and its perfect freedom from pain or distress to the patient.

Of course, after so few trials as have yet been made with galvanism in the practice of midwifery, it is very difficult to form an opinion as to its exact value, and the particular cases in which it is likely to supersede means that have been previously adopted. That it is a very powerful remedy there can be no doubt in the minds of those who have seen it tried, and that the uterus will respond to its application, whilst the general system is completely prostrated, is equally certain. This latter circumstance is one of its peculiar merits, as I believe there is no other means by which

we excite uterine contraction that is not liable to fail when severe hæmorrhage has weakened the vital powers.

But the pain and disagreeable sensations produced by the galvanic shocks and currents when passed through the uterus, are such as one would not wish to subject a patient to unnecessarily, and this is one of its disadvantages. For this reason I think that we are bound to try other means before having recourse to it, excepting such circumstances exist as render it hazardous to the mother or child to lose any time. Thus, supposing we have a case of uterine inertia, we should try frictions, pressure and cold to the abdomen, rupturing the membranes if justifiable, and even the ergot in most cases before having recourse to galvanism. But if we should have uterine inertia, complicated with funis presentation, the funis pulsating well, and the passages in a favourable state, a case by no means uncommon, we should lose no time in applying galvanism, inasmuch as the only chance for the child consists in a rapid delivery, which indeed might still require the forceps for its accomplishment. I believe it to be a perfectly safe remedy, since I have never seen anything to lead me to suppose that either the mother or child have suffered from its use.

From the little I have seen my opinion is that it is a most valuable means in that class of cases for which Dr. Radford first recommended it, viz., uterine hæmorrhage before, during, and after, labour in the latter months of pregnancy; and it must always be remembered that its application need not, in any way, lead us to neglect the ordinary methods of treating these cases, if there is any reason for giving them a previous trial. Of course from this statement must be excepted the old plan of delivering the child where great exhaustion of the mother is present, to supersede which practice galvanism was specially brought forward.

*Prov. Med. and Surg. Jour., March* 18, 1846. *p.* 117.

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186.—GALVANISM IN A CASE OF ACCIDENTAL HÆMORRHAGE.—By Thos. Radford, M.D., Consulting Physician to the Manchester Lying-in Hospital.

[This patient was eight months advanced in pregnancy when she received a fright which was followed by a copious discharge of blood from the uterus. On Dr. R's arrival the os uteri was rigid and closed, and the hæmorrhage profuse, which could not be arrested under the ordinary means. The uterus was flaccid and inactive, which, in Dr. Radford's opinion prevented the application of the plug. He at once determined upon rupturing the membranes, which he did with a small catheter and applied friction to the abdomen, which, however, failed in producing uterine action, cold applications were made, but the hæmorrhage still continued, and delivery could not be proceeded with as the os uteri still remained rigid and closed. Dr. Radford adds.]

Under these circumstances I determined on the application of galvanism, and therefore sent for my apparatus. When it had arrived and was made ready for use, the lever regulating the intensity of power was placed at the middle point. I now passed the vaginal conductor to the anterior edge of the os uteri—having first placed the other over the fundus, and which was held by an assistant. The circle was now completed, and the patient immediately complained that I was cutting her. The abdominal conductor was removed and reapplied on different parts of the fundus; and so also was the vaginal one changed so as to act through every part, as far as possible of the long axis of the uterus. From the moment that the circle was complete, uterine pain was excited; and a bearing-down effort was produced. These effects were observed to be more or less intense according to the length of time the conductors were allowed to remain applied. The uterus was felt to be tonically contracted during the intervals, and this effect was observed to be increased after each temporary action induced by the application of the connection rod.

This plan was continued at intervals for half an hour. I now withdrew the vaginal conductor, and placed a common conductor externally on each side of the uterus, so as to pass the galvanic current in a transverse and oblique direction. In doing so I moved them from the upper to the lower part of the organ, taking care to have each placed in such a manner that every portion of the uterine tissue (as far as possible) was subjected to the influence of this remedy. From the time that the uterus began to contract the flooding abated, and soon altogether ceased. The os uteri also began to soften, and gradually yielded, so that at the end of six hours it was so far dilated as to allow the head of the child to pass through it. The child was born alive. The placenta was also expelled without further assistance. There was no further flooding. The uterus was found firmly contracted.

Remarks.—The power of galvanism to excite the uterine fibre to contract was admirably shown in the foregoing case. It not only originated the temporary contraction of the uterus, but also produced such a lasting impression upon this organ, that the pains continued to occur (if any way different from those which accompany its normal action in being more energetic), until the labour was completed. The value of the tonic contraction of the uterus in arresting bleeding is well known to the practical obstetrician; and, as I have elsewhere observed, this favourable condition of the organ is increased in degree after each application of the galvanism. When we employ this agent we should take care not to continue it too long, but interrupt the connection, so as to allow the uterus intervals of rest, and thus, as nearly as possible to imitate nature's operations. It sometimes happens that our usual means fail to produce the effect we desire; and although cases of this kind are exceptions, yet they are sufficiently numerous, and also of such a dangerous character as to demand, on the part of the obstetrician, an inquiry whether some plan can be adopted to place the patients in a state of safety. The truth of the above statement, in cases of accidental hæmorrhage, is proved by the great discrepancy in the opinions of different writers as to the proper treatment to be adopted. One class recommend the membranes to be ruptured according to Puza's plan, and they assert that reliance may invariably be placed on this practice as an infallible means of arresting the discharge.

Another class recommend delivery (as a primary operation) as soon as it can be safely performed. They think that rupturing the membranes will frequently fail to fulfil the indications intended; and that afterwards when the relative local condition of the patient is unfavourably altered, it will become necessary to turn and extract the child, and thus render the operation more dangerous to the patient, and more difficult to the operator. The different views entertained by these writers (all of whom are men of the highest reputation) upon a subject of such vital importance, clearly prove that sometimes the one plan and sometimes the other may be advantageously adopted. My experience tends to corroborate this conclusion, and I am of opinion that rupturing the membranes will not invariably succeed in arresting the bleeding, and indeed the case above detailed is an example of the truth of this assertion. In the course of my practice I have met with many others where I have been disappointed in the results, and have been compelled to have recourse to delivery. It is, then, in such instances as these, that we can with such certainty of success bring into use this most powerful agent—galvanism, to supersede the necessity of proceeding to undertake an operation which, when ultimately undertaken is always attended with more or less danger to the patient, and of difficulty to the operator.

There is also a contingent organic rigidity of the os, and an undeveloped state of the cervix uteri, which renders delivery either impossible or dangerous, or at least very hazardous. We meet with cases in which it is quite impossible to introduce two or three fingers through the os uteri without lacerating this part, and if the hand is forced through, however cautiously

done, the mischief must be considerably increased; but the danger does not end here; for when the child is turned, and its more bulky parts brought rapidly (as is too frequently done), to pass through this opening, contusion and laceration to a greater or less extent must inevitably occur.

Are we warranted, then, to incur the risks of delivery, in such cases, in order to conform to preconceived notions, or at most only obtain an apparent immediate advantage? Do we not possess other remedial means capable of placing our patient in a state of security until the parts assume a more favourable condition for delivery? Most certainly we do—the plug in some cases, and galvanism in others. There is a dogma extant amongst writers and practitioners, which has a baneful tendency if followed, and leads to disappointment to the practitioner and danger to the patient. This I have adverted to in my lecture on galvanism, and in the following words:—I now refer particularly to that assertion of certain writers, who say, that by the evacuation of blood, the soft parts become so weakened and dilatable, that delivery can always be accomplished. . . . The os uteri will continue undilatable, although the woman may be in such a state of exhaustion as to be literally tottering on the brink of the grave! It is true that this state of matters does not generally exist, but it is too frequent to be overlooked in determining our line of practice."—*Prov. Med. and Surg. Journal.*

If these remarks wanted further corroboration than my own practice furnishes, I have the opportunity of bringing forward the testimony of one of the most worthy and practical obstetricians of our time, whose virtues stand acknowledged, and whose practical experience is unrivalled: I mean Dr. Merriman. This opinion was conveyed to me in a private letter, after he had read my lecture.

[With due deference to Dr. Radford, we think that the use of the plug in such a case as this ought not to be dispensed with. We cannot agree in the opinion that because the uterus "felt flaccid to the hand when placed over it," the plug could not safely be used for fear of the blood accumulating internally: we consider this to be an erroneous doctrine: after the rupturing of the membranes and the evacuation of the liquor amnii, the plug ought to have been effectually introduced; and a small portion of rag might have been pushed a little way into the os uteri, or, at any rate it might have been so placed as to effectually plug it, and to be kept in its place by successive portions of rag till the vagina was filled. Although we think that galvanism may be useful in many of these cases (for which reason we have given full reports of most of the cases of this kind), yet we should not like to depend upon it when we have such a very safe and effectual remedy as the plug, when judiciously used.] *Med. Gaz., Jan.* 2, 1846, *p.* 19.

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187.—CASE OF UTERINE HÆMORRHAGE, IN WHICH GALVANISM WAS EMPLOYED.—By HENRY WILSON, Esq., Surgeon, Runcorn.

[Mr. Wilson's patient was two months advanced in her pregnancy, when hæmorrhage from the uterus took place. When Mr. Wilson saw her she was quite blanched, with small weak pulse; he ordered gallic acid and cinnamon powder to be given every two hours, applied cold to the pubes and thighs, and a bandage round the abdomen; the room to be kept quiet and cool; a sanguineous oozing, however, was constantly going forwards, and in about ten hours, a large quantity of blood escaped, followed by syncope and convulsions; the pulse became imperceptible, and the extremities cold. She was roused by stimulants, and on examination the os uteri was found open and soft. Mr. Wilson observes:]

I now proceeded to inject the vagina with a half a pint of cold water, and repeated the same process by rectum. The vagina was then plugged with a soft cambric handkerchief, and a full dose of ergot, with twenty minims of diluted sulphuric acid given. This dose was repeated at intervals of

fifteen minutes, until six doses were taken, equivalent to three drachms of the ergot; in the meantime ammonia and brandy were almost constantly required to avert syncope. During three hours that I remained with my patient, her life appeared to depend on the assiduous administration of stimuli.

Having left the house for a short time, I found, on my return, that the tampon had been expelled, accompanied by a large quantity of blood and coagula; I decided not to re-introduce it, that I might repeat the injections of cold water. During the succeeding two hours these were administered several times, and they seemed, on each occasion, to check the discharge for a few minutes, but the vagina soon became hot again, and the discharge re-appeared. The case now appeared to be utterly hopeless. She could no longer swallow the brandy, and was only roused from a state of apparent insensibility, bordering on syncope, by the scarcely interrupted application of ammonia to the nares. The pulse had almost forsaken the wrist, being doubtfully perceptible; the eyes remained rigidly open and fixed; in short, death seemed imminent. As a dernier resort, with but faint hopes of doing any good, I resolved to try galvanism, as suggested by Dr. Radford.

My residence being within a very short distance, I was enabled, in a few minutes, to have the apparatus in action at my patient's bed-side. A copper wire, coated with thread and sealing wax, with a ball of moistened sponge, about the size of a nut, fastened to one end of it, served for a vaginal conductor. The sponge was passed within the os uteri, and there retained. I previously ascertained that shocks could not be elicited from any part of the wire except from the sponge, at its extremity. The conductor from the other pole of the apparatus was then applied over various points of the sacrum and loins, and shocks, and continuous currents of the galvanic fluid transmitted through the parts intervening between these points and the sponge at the os uteri. Ten minutes elapsed ere the patient appeared sensible of the galvanic agency. The first indication of this was observed in her countenance, her glassy, corpse-like eye, brightening up with something of its wonted expression. In the course of ten minutes more, the pulse was more distinctly perceptible, and she complained of pain in the abdomen. After continuing the galvanic influence for a few minutes longer, the apparatus was withdrawn.

The following day found her still free from hæmorrhage, but she voided with the urine a fleshy substance, about the size of a fig.]

*Prov. Med. and Surg. Jour., April* 29, 1846, *p.* 194.

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188.—ELECTRO-MAGNETISM IN LINGERING LABOUR FROM UTERINE INERTIA.—By Mr. CLARKE.

[At a meeting of the Obstetrical Society of Dublin, in January last,]

Mr. Clarke gave the detail of two cases in which he employed the induced electro-magnetic current with perfect success, in the Rotunda Lying-in Hospital of this city, in February, 1845, in one of which the membranes had been ruptured forty-nine hours, and in the other the labour had lasted sixty hours, and in each case the child as well as the mother, did well. Mr. Clarke also remarked that although this agent had been previously employed in uterine hæmorrhage by Dr. Radford, of Manchester, yet that he believed that these were the first cases in which it had accomplished parturition. And after describing the method which he deems fittest for the application of the power, namely, from over the sacral plexus of nerves to the recto vaginal septum, as near the os uteri as can be done without passing the current through the head of the infant (the vaginal director being coated with sealing wax varnish, except at its external ball): he described some experiments made upon the lower animals, by means of which he proved

the superiority of galvanism beyond electro-magnetism in exciting the action of the heart and vermicular motion of the intestines, after both these functions had ceased from asphyxia.

*Dublin Hospital Gaz., March* 1, 1845, *p.* 216.

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189.—OPIUM IN HÆMORRHAGE.—By Dr. Griffin.

Of all the wonderful influences exerted by opium, that by which it sustains the powers of life when sinking from hæmorrhage, and arrests the flow of blood, is the most extraordinary. When after severe uterine hæmorrhage the countenance is sunk, the eye hollow and glassy, the lips blanched, the skin cold, and the whole person corpse-like, when the pulse is almost gone at the wrist, when the beat even of the heart is scarcely perceptible, and stimulants, even brandy or rectified spirits, are either vomited or uninfluential, there remains yet one remedy capable of restoring the patient to life, and that is opium. I believe its power of saving life in these circumstances depends principally on its specific property of producing congestion in the brain. That amount of congestion by which it occasions apoplexy when given in large doses to persons in health, seems only sufficient to sustain the natural and necessary tension of the cerebral vessels in those who are dying of hæmorrhage. Persons die in cases of hæmorrhage, not so much from mere debility of the heart's action, as from the loss of nervous power in the brain consequent to it, and hence a fainting from which they are never awakened. The opium in such cases not only stimulates the heart's action, but restores a sufficient degree of tension in the vessels of the brain to prevent faintness, and by the judicious repetition of the remedy, life is preserved on the very borders of death. There are no instances in which opium can be given so freely or so fearlessly as in these. When the danger is imminent, five grains may be given at the first dose, and two or three every hour or half hour afterwards, until the pulse becomes distinct, the breathing easier, and the tossing and flinging about in the bed is allayed. It is hardly necessary to observe, that in such cases, in conjunction with the use of opium, the administration of warm wine and brandy (however inefficient alone), and the application of heat to the extremities, are highly useful, if not absolutely essential. *British and Foreign Med. Review, Jan.* 1846, *p.* 107.

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190.—ON THE TREATMENT OF UTERINE HÆMORRHAGE AFTER DELIVERY.—By Dr. Beatty.

[At a meeting of the Obstetrical Society of Dublin, Dr. Beatty read a paper on the use of ergot of rye as a means of preventing uterine hæmorrhage, more especially in those cases where, from previous experience, there is reason to expect hæmorrhage after delivery.]

The mode he adopts is the following. He prepares an infusion of one drachm of ergot in four ounces of boiling water, and when the child's head has just cleared the external orifice, he gives one half of the dose, including the powder, and when the child is entirely expelled, the remainder is given. Dr. Beatty gave the details of several cases, in which this practice was followed by complete success. The placenta was thrown off in all without any difficulty, and in none did the slightest hæmorrhage appear, although in former labours the greatest danger to life had been experienced.

[Dr. Beatty also spoke of the power of ergot in allaying after-pains, and also of its effects in menorrhagia, when given in doses of five grains, two or three times a day.] *Dublin Hospital Gaz., March* 1, 1846, *p.* 216.

191.—ERGOTINE IN UTERINE HÆMORRHAGE.—By Dr. Ebers, of Breslaw.

[Dr. Ebers has met with considerable success in the treatment of uterine hæmorrhage, by ergotine. He gave it to a patient who was labouring under profuse hæmorrhage, in consequence of destruction of the substance of the uterus by malignant disease. The bleeding was arrested after a few doses; the ordinary remedies had previously failed. In another case, where the hæmorrhage was very profuse, large quantities of dark fluid blood passing away mixed with large clots, it proved very successful. Dr. E. observes on this case.]

Under such circumstances, I prescribed the ergotine in two-grain doses every two hours: twelve doses had scarcely been taken before the hæmorrhage completely ceased, so much so that not a trace of blood could be detected in the urine. The sequel was still more important. The patient rapidly recovered, in ten days was able to leave her bed, complaining only of the sense of weight in the spleen, and in a fortnight, though still weak, was able to return to her domestic duties after twenty-eight days; the catamenia returned at their proper time, and lasted for eight days, the patient, during their continuance, experiencing no other unpleasant symptom than uneasiness in her spleen.

[From these cases alone we can scarcely draw very positive inferences, as to the dependence to be placed on this remedy, yet it must be allowed that the ergot possesses powerful curative properties, and also that the ergotine appears to be free from the pernicious effects of secale itself. Dr. E. remarks:]

It is easy to suppose that injurious effects might readily result from the employment of a remedy which exerts so powerful an effect on the contraction of the vessels, or possibly on the condition of the blood itself. It will be by no means right, therefore, suddenly and indiscriminately to check hæmorrhages of all kinds, and it may be a question whether ergotine is admissable in cases of the so-called active hæmorrhages, which certainly are rare, or in hæmorrhoidal bleedings, as in every case of hæmoptysis, there is certainly need of much caution in the free and general employment of this remedy. On the other hand, it is highly important both for medicine and surgery, that so powerful and valuable a remedy should be generally adopted. The chief and most important effects of ergotine, as before stated, are observed in cases of uterine hæmorrhage, whether chronic or acute, whether dependent upon a dynamic or an organic cause, and in but one case have I had to doubt its efficacy, and that was where the hæmorrhage occurred in a young unmarried female, and was the result of injury.

[The first case here alluded to by Dr. Ebers was a woman, seventy-two years of age; the hæmorrhage, as might be expected from the nature of her disease, constantly recurring, but was invariably arrested by a few three-grain doses of ergotine. Of course, it cannot be expected that the ergotine can cure these unfortunate cases, but by its aid, certainly one of the most formidable of the symptoms can be alleviated. Dr. E. observes that it is always ready in the wards of All Saints' Hospital, for the cure of patients affected with malignant uterine disease, and that in some cases it has been given to the extent of half a drachm daily.] *Med. Gaz., Jan.* 9, 1846, *p.* 55.

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192.—ON THE TREATMENT OF UTERINE HÆMORRHAGE AFTER DELIVERY.—By Geo. Harvey, Esq., Essex.

[In a communication in the Medical Gazette for January 30th, 1846, Mr. Harvey describes a very simple, and no doubt effectual mode of arresting uterine hæmorrhage after delivery; it has an advantage over the pad invented by Mr. Pretty, inasmuch as it is always at hand, not requiring to be carried about in the pocket. Mr. Harvey writes as follows:]

Suppose, for instance, hæmorrhage to an alarming extent occurs immediately after the expulsion of the placenta, I instantly turn the patient on her back, and grasp the uterus firmly with my hand, through the abdominal parietes, till I feel it contracting. Then take a small bowl or basin capable of containing twelve or fourteen ounces, and having a thick smooth edge; this basin I invert over the body of the compressed uterus, taking care that the whole of it is compressed within the cavity of the basin. I now confine it steadily by a towel folded lengthwise, and passed under the hips of the patient, from right to left; then brought up over the basin, and secured by three or four strong pins. Or in lieu of the towel, two strong silk handkerchiefs may be used in the following manner;—Let each handkerchief be folded, separately, as a man folds his neckcloth; fasten them together at one end by a reef-knot, allowing the other two ends to remain free; pass the reef-knot under the hips of the patient, from right to left; bring it over the basin, which should be firmly pressed down by an assistant. Now take one of the free ends, and pass it through the loop, or bight, as a sailor would term it, formed by the reef-knot; draw it firmly down, and with the other free end tie a slip-knot exactly as the tapes are tied round the splints for securing a fractured limb. Thus confined, it is impossible the uterus can be again distended, and any further hæmorrhage must appear externally. Perhaps it will be as well to place a thin, soft napkin, or allow the patient's under-garment to remain between the surface of the abdomen and the basin, to prevent the possibility of its acting as a cupping-glass.

*Med. Gaz., Jan. 30, 1836, p. 219.*

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193.—TREATMENT OF UTERINE HÆMORRHAGE AFTER DELIVERY.—By J. R. Pretty, Esq.

[When other means have failed to arrest hæmorrhage after delivery, the use of firm but well-regulated pressure on the abdomen has very often succeeded. A book or other pad substance has been placed on the abdomen, and kept in place by means of a tourniquet. Mr. Pretty has contrived a bandage and pads, which appear very capable of effecting the object in view; he describes the apparatus thus:]

It consists of three pads, the central one being the largest; the lateral ones are thicker and narrower, and fold over the central one when not required for use, and these can be carried separately from the belt, &c., and, when together, are not larger than a small book. The belt is of webbing, about three inches wide, and is fastened by a buckle and strap. It has attached to it Mr. Coxeter's improved tourniquet, the screw of which is only one half the length of the one on the old principle, and yet it raises as much web, so that this is easily carried. The application is very simple; you merely adjust the pads, pass the belt under the woman, and fasten it on the right side as tightly as possible, and then give the tourniquet screw one or two turns. You thus have a most powerful grasping pressure at your command, from which the uterus will not slip: the pressure is at the same time made as diffused and equable as possible, and to accomplish the latter point, I had one at first made larger than that which I have spoken of, but found that it was unnecessarily large. The lateral pads quite do away with the necessity of a broad bandage, as the use of the latter would be to afford support in front, which it fails to do; and the advantages of a narrow one are these—it is more portable, it is more easily passed under the patient and fastened, and it presses behind only on bony structures, and not, as the broad one, half upon these and half upon the yielding soft parts above them. The lateral pads can be made pockets, with the metal plate behind, and to be filled with soft materials when required for use, as old linen, or they might be made air cushions, to be inflated when required for use, though it is doubtful if these last would thus answer. The stuffed ones are not at

all too large to be easily carried in the pocket, and no one, save a very fastidious person (which an accoucheur is not likely to be) could object to carry them. However persons may differ from me in the views I entertain, I do hope that it will not prevent a fair trial of this apparatus; and, I believe the only differences that can exist would be theoretical ones, as I feel convinced that these pads, &c., will be found equal to arrest violent flooding or the draining succeeding this, immediately, and that pressure, thus applied, will in time, be considered the most safe and effectual means that we have at our command. The belt, pads, &c., can be seen at Mr. Coxeter's, Grafton-street, University College. *Med. Gaz., Jan.* 16. 1846, *p.* 117.

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194.—CASE OF TRANSFUSION.—By Robert Brown, Esq.

[Mr. Brown relates a case of transfusion which he performed in November, 1837. His patient, who had been subject to epilepsy, was suddenly attacked, during labour, with most alarming prostration. The child's head was opened and delivery speedily effected, but she did not rally; the lochial discharge was not more than usual. Stimulants were given, and friction along the spine made use of, with other means likely to restore her, but without effect. Mr. Brown then recommended transfusion, although he very much doubted its efficacy. He describes the operation and its effects as follows:]

Maw's instrument was the one employed; the central cup, designed to hold the blood, was surrounded by hot water, intentionally made two degrees above the temperature of the fluid. I took from the woman about ℥iv., which were received in the prepared vessel, and in the quickest manner I could, while my assistant was engaged in receiving the blood into the apparatus, I punctured the right basilic vein of the patient, and most readily (after sending a stream of blood through the instrument, to expel the atmospheric air which it contained) passed the extremity of the tube into the vein. The piston was slowly worked: after its second movement the patient expressed that she could feel the transfused blood "go along her arm into the heart, and quite warm it." Before I had injected the remainder of the blood, she gradually improved both in colour and in warmth, and avowed her delight that I was no longer of a "green colour, but quite right." Her subsequent recovery took place without any untoward symptoms.

*Northern Jour. of Med., Dec.*, 1845, *p.* 394.

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195.—ON THIRTY-FOUR CASES OF PLACENTAL PRESENTATION.—By J. C. W. Lever, M.D., Lecturer on Midwifery at Guy's Hospital, &c.

[In the Medical Gazette Dr. Lever publishes a table of thirty-four cases of placental presentation, in which he notices the exact nature of the presentation, the practice adopted, and its result as far as the mother was concerned. In some remarks on these cases, Dr. Lever observes that,]

By referring to the table, it will be seen that only two of the thirty-four women were primiparæ.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| In 5 | women it was the | 2d | confinement. | In 3 | women it was the | 8th | confinement. |
| 3 | " | 3d | " | 3 | " | 9th | " |
| 4 | " | 4th | " | 1 | " | 10th | " |
| 5 | " | 5th | " | 2 | " | 11th | " |
| 4 | " | 7th | " | 2 | " | 16th | " |

Two women are stated to have arrived at the full period of utero-gestation, twelve to have been delivered between the eighth and ninth months of pregnancy, and seventeen at the eighth month and under. In fifteen cases the presentation of the placenta is marked "complete;" in eighteen it is

stated to have been situated "partially" over the os uteri; in the case marked "not known," I believe it to have been complete, but the placenta was removed piecemeal by the midwife before I was called to the case.

*Mode of Delivery.*—In two cases of partial presentation, the membranes were ruptured, and delivery completed by the natural efforts. In thirty, the operation of version was performed; in one of them, the head of the child could not be extracted until its size had been lessened by the perforator: a similar operation had been practised in her previous confinement (the first). In but one case was the placental mass perforated by the hand of the operator. In one case (34) the patient had lost a considerable quantity of blood, being attended by a midwife who had removed the placenta "piecemeal;" the divided funis protruded through the external parts. After administering stimulants, and waiting for some time until the patient had rallied, I delivered her by means of the crotchet.

To Case 33 I was called, and found the patient sinking, with no pulse at the wrist, and the heart's action scarcely to be felt. At three in the morning of the day I visited her, she had had her eighth attack of bleeding; these losses having occurred in the course of five weeks. The presentation had not been discovered, and blood was still trickling from the vagina. Brandy and ammonia were given by mouth, and brandy in gruel injected "per anum." The hand was readily admitted into the vagina, which was very relaxed, and a considerable portion of the placenta was found detached and protruding through the os uteri; its remaining attachment was separated, and the mass removed; there was no pulsation of the funis. The bleeding immediately ceased, and did not recur until her death, which shortly took place. This was a case in which the efficacy of transfusion might have been tried, but not knowing the nature of the case when I left home, I was unprovided with the necessary instruments. One of the cases was delivered by Dr. Ashwell, two by my late colleague, Mr. Tweedie, three by pupils attached to the Lying-in Institution of Guy's Hospital, three by surgeons in practice, and the remainder by myself.

Thirty-three children were delivered; eighteen born alive, and fifteen dead. Of the eighteen born alive, nine were males, and nine females. Of the fifteen still-born children, twelve were males, and three females; so that twenty-one children were males, and twelve females. Eight deaths occurred; of these, three deserve especial notice. In one (Case 18), the woman died with pericarditis, having, in the absence of her nurse, risen from her bed a few days after her delivery, and walked down stairs to open the street door. In Case 30, peritonitis took place on the third day, and proved fatal on the fifth day. In Case 32, the patient died on the ninth day, of phlebitis, having been exposed to contagion. These causes of death might have prevailed if the labours had been perfectly natural. Case 33 died with the child in utero, a short time after the removal of the placenta. In four cases death took place soon after the performance of the operation of version; Case 3 in seven hours, transfusion having been unsuccessfully performed; Case 12, immediately after delivery: this woman had had previously two copious losses of blood, without sending for assistance; Case 19, in one hour after delivery: her powers were previously reduced by gin-drinking and a want of food; and Case 24, a weakly woman, who had born ten children, and was most destitute.

I have seen three other fatal cases of placental presentation, in which version was performed, but I am unable to obtain the necessary particulars. In one, the woman died while the operator's arm was in the uterus; in the second, the patient expired in three quarters of an hour after delivery, hæmorrhage continuing after the extraction of the child and secundines, with the uterus well contracted. Although no post-mortem examination took place, I am inclined to believe the os uteri was lacerated by the hand of the operator, and in the third case the patient died immediately after the delivery of the child, before the expulsion of the placenta. The first four-

teen cases have been recorded in the Septennial Report of the Guy's Hospital Lying-in Charity, published in the Sixth Volume of the Reports, but at p. 66, line 19, there is an error, which I will take this opportunity of correcting. The paragraph runs, "in all, delivery was accomplished by the operation of turning," it should be, "in all, with the exception of one, delivery was accomplished by the operation of turning."

*Med. Gaz., Dec.* 12, 1845, *p.* 1424.

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196.—ON HEAD PRESENTATIONS, WITH THE FOREHEAD ORIGINALLY DIRECTED FORWARDS OR TOWARDS THE OS PUBIS.—By J. Y. Simpson, M.D., F.R.S E., &c.

[Of 335 cases of cranial presentations at the Maternity Hospital, Edinburgh, Dr. M. Barry, house-surgeon, makes the following report, in a tabular form, of the positions of the head of the child:]

I.—*Occipito-anterior Positions.*

| | | |
|---|---|---|
| 1. Position; or occiput directed to left foramen ovale, | in | 256 cases. |
| 2. Position; or occiput directed to right foramen ovale, | in | 1 " |

II.—*Occipito-Posterior Positions.*

| | | |
|---|---|---|
| 3. Position; or occiput directed to right sacro-iliac synchondrosis | in | 76 " |
| 4. Position; or occiput directed to left sacro-iliac synchondrosis | in | 2 " |
| Total, | | 335 " |

[The following table shows the position of the head in 3491 cases of cranial presentation, observed at the Heidelberg Hospital:]

I.—*Occipito-anterior Positions.*

| | | |
|---|---|---|
| 1. Position; or occiput to left foramen ovale, | in | 2262 cases. |
| 2. Position; or occiput to right foramen ovale, | in | 4 " |

II.—*Occipito-posterior Positions.*

| | | |
|---|---|---|
| 3. Position; or occiput to right sacro-iliac synchondrosis | in | 1217 cases. |
| 4. Position; or occiput to left sacro-iliac synchondrosis | in | 8 " |
| Total, | | 3491 |

[In his clinical remarks on these cases, Dr. Simpson says:]

Observe this point—either end of the axis of the long diameter of the fœtal head—that is, either its occiput or forehead—may be placed at either end of the long or right oblique diameter of the brim of the pelvis. Most frequently we find the occipital extremity of the infant's head placed forwards, or situated at the anterior extremity of the right oblique diameter. In other words, most frequently the occiput is placed behind the left foramen ovale; and this constitutes the first position of most authors who use a numerical nomenclature. But the arrangement is sometimes exactly reversed; that is to say, occasionally the frontal extremity or forehead of the infant is placed forwards or behind the left foramen ovale, and consequently the occiput is, under this cranial position, directed backwards, and to the right sacro-iliac synchondrosis. To recapitulate;—in this last variety of cranial position (the immediate object of our investigations), the long diameter of the child's head lies as usual at the commencement of labour, parallel with the left oblique diameter of the brim, but with the face or forehead, instead of the occiput, placed behind the left foramen ovale; or, in other words, pointing forwards to the left groin. Dr. Hamilton and others have properly stated, these are not strictly cases of presentations of the forehead "to the pubis," but of presentations of the forehead to one or other groin. And I have already shown you why the groin to which the forehead points is so far more frequently the left than the right, that, for the present, I leave the latter variety out of consideration, and apply my subsequent remarks entirely to that cranial position in which the forehead

points to the left foramen ovale or left groin. This position is the third position of the head in the two tables of cases which I have already shown you.

First, let us inquire when, at the commencement of labour, the occiput is situated posteriorly in passing through the brim of the pelvis, in what relative position does it emerge from the outlet? In other words, in occipito-posterior positions, Does the occiput maintain the same relative position to the back of the pelvis in passing through the brim, cavity, and outlet?—In most of your text-books you will find this question answered in the affirmative. For instance, Denman, Merriman, Blundell, Hamilton, and others, alledge, that in the natural mechanism of this class of cases, the head retains throughout the same position relatively to the parts of the mother—that it enters the brim of the pelvis, passes down into the cavity, and makes its exit through the outlet, in the same position; that is, with the forehead or face always directed anteriorly, and consequently the occiput always pointing posteriorly. Long ago, Solayres showed distinctly that this was by no means the common and natural course of events in instances of this presentation, but his observations were unattended to. Since Naegele, however, wrote his admirable essay on the Mechanism of Parturition, the whole subject has been much more studied; and we now know, from abundant and accumulated evidence, that the ideas generally held with regard to the mode in which labour proceeds in occipito-posterior positions are quite incorrect. For it has been ascertained, beyond the possibility of doubt and cavil, that in almost all cases in which the occiput is originally placed posteriorly, the head, upon descending down upon the floor of the pelvis, so far changes its position as to rotate round, so that at last the occiput, and not the forehead, emerges anteriorly under the arch of the pubis; and consequently, the face, which looked forwards, or towards the pubis at the commencement of labour, is turned backwards towards the sacrum or perineum at the conclusion of it. In short, in reference to cranial presentations, we may lay it down as a general law, admitting of few and occasional exceptions only, that in whatever position the head is found entering the brim, whether with the occiput directed anteriorly, or directed posteriorly, it will ultimately pass through the outlet and vulva with the occiput placed under the arch of the pubes, and the forehead and face gliding over the perineum. When the forehead is primarily situated behind the left foramen ovale, as occurs in the cases forming the subject of my remarks—the head in passing through the lower pelvic apertures, rotates to the left and backwards a quarter of a circle, and at last comes out at a position at right angles to that in which it entered; the occiput which was originally placed opposite the right sacro-iliac synchondrosis, rotates to the right and forwards in a corresponding degree so as to be placed opposite the foramen ovale of the same side, and emerges under the arch of the pubes; and the long diameter of the infant's head, instead of remaining parallel with the right oblique diameter of the pelvis, is latterly born in parallelism with the left oblique diameter of the outlet.

Many practitioners report merely the position of the head as it is observed to emerge ultimately from the outlet, and not as it may be found higher up in the pelvis. But we have seen, that in occipito-posterior positions the occiput almost always rotates forwards, before it passes the vulva. Hence one enormous source of error. For all, or nearly all those cases which were originally occipito-posterior positions come to be thus inadvertently reported among the number in which the occiput is situated anteriorly.

[Dr. Simpson next alludes to the means of diagnosing the actual position of the head of the child, noticing briefly the movements of the fœtus, and the sounds of the fœtal heart, and then proceeds to speak of the most positive method, viz.:]

*The Tactile Examination of the Child's Head.*—Both the signs which I

have already mentioned, the sensations of the fœtal movements, and the seat of the sounds of the fœtal heart, yield in value to the more direct and more certain evidence derived from actually feeling and touching the fœtal head with the fingers in a vaginal examination. When the finger is introduced, you feel the sagittal suture of the infant's head crossing obliquely the opening of the os uteri, in a line parallel with that of the right oblique diameter of the pelvis. Both in the common occipito-anterior, and common occipito-posterior position, this is the direction of the sagittal suture—so that the mere direction of the suture will not afford you a distinctive diagnostic sign. Run your finger, however, along the suture to either of its extremities—say to its anterior extremity, which is generally easily reached and you may at once fully determine the position of the head, by fully determining which of the two fontanelles is placed at the anterior or pubic extremity of the suture. If the fontanelle which you touch in this situation is four-limbed and quadrangular, it is of course the anterior fontanelle, and necessarily shows the forehead to be placed anteriorly; and consequently the occupit must be directed to the posterior part of the pelvis. But always be perfectly certain, that it is the anterior and not the posterior fontanelle which you are touching, that it is a space or bregma quadrangular, and not triangular in its figure, and formed by the meeting of four, and not of three sutures.

[With respect to treatment Dr. Simpson observes:]

Upon this subject, let me, in the first place, state to you this strong and important fact—in not one of Dr. Barry's seventy-seven cases—and in not one of the other two or three hundred cases of head presentation, with the forehead directed forwards, which have occurred among the patients of the Maternity Hospital since its first institution—in none (I repeat), has any kind of aid or interference by the hand, or forceps, or other instrument been required or given. In stating this as the result of our observations and practices here, I state what I believe would be the result of your observations, and the line of your practice, in your future professional experience. In a vast majority of occipito-anterior positions you require to offer no unusual aid or interference. In exactly the same way, in a vast majority of occipito-posterior positions—in ninety-nine out of the hundred—you require to offer no unusual aid or interference of any kind or description whatever. You must equally look upon the one position and the other as constituting a perfectly natural labour—so far as in each the mode and mechanism of parturition are concerned.

You will find, however, doctrines and practices very different from this, taught in regard to the treatment of occipito-posterior positions in most obstetric works and text-books, modern as well as ancient.

[In concluding his clinical remarks, Dr. Simpson drew the following results as arising from this inquiry:]

We have found many estimable authors considering occipito-posterior positions to be exceedingly rare; I have shown you that, on the other hand, they are exceedingly common. They are generally represented as maintaining throughout the labour their original position with the forehead anteriorly; I have pointed out to you that, on the contrary, in twenty-nine out of thirty cases, the forehead rotates round, and ultimately emerges posteriorly. Formerly it was believed that this internal rotation of the head was never performed by the unaided natural mechanism; now we know it to be easily accomplished in every, or in almost every case, and without the slightest artificial assistance of any kind. Many excellent authors alledge that, in occipito-posterior positions, the process of labour, as a whole, is attended with unusual difficulty and danger; but we have seen abundant evidence to prove that this is a most ungrounded fear, and that the labour, like that in occipito-anterior positions, belongs more strictly to the class of natural labours. And, lastly, we have seen no small variety of artificial and operative measures more or less strenuously recommended in the treat-

ment of these cases in some of our best and ablest text-books; but, on consulting the text-book of nature, we have further found that the peculiarities of cases of this position required in the way of artificial or operative aid—nothing—absolutely nothing.

In commenting upon these cases elsewhere, I some years ago observed, "If there is any truth whatever in statistics, we venture to say, from the data we have adduced, that such cases daily occur, and pass over unobserved in hundreds of instances in which the labour is supposed to be, and no doubt is, perfectly natural." Occipito-posterior positions of the head, "require," says Naegele, "no peculiarly favourable circumstances, but these species of labours can be completed by the natural powers under the most usual proportions, in the same time, with the same expense of strength, and without greater difficulty, than when the head takes the more common position." Perhaps these remarks of Naegele are too absolute; for in occipito-posterior positions, the occiput requires to pass in its transit, through a longer and more curved pelvic line, than in occipito-anterior positions; consequently in the Hospital statistics, drawn up for me by Dr. Barry, occipito-posterior positions seem on the whole to require a somewhat greater length of time than occipito-anterior positions. The difference, however, is so inconsiderable as not to invalidate in any, the slightest degree, what I have already stated regarding the perfect safety and facility with which unaided nature is capable of finishing the labour in this common class of cases.

But, supposing that, in consequence of inertia of the uterus, or constitutional exhaustion, or the state of the maternal passages, or size of the head of the infant, or any other of those causes which sometimes force us to deliver by the forceps in occipito-anterior positions, we were necessitated to use the same instrumental aid in an occipito-posterior position, is there any notable difference in the mode in which we should conduct the operation in the latter case, from the mode in which we should conduct it in the former? I believe there is, in one respect, an important difference, and that there is

*One special Rule for Delivery with the Forceps in Occipito-posterior Positions.* It is this. In occipito-posterior positions the mechanism of the extraction of the head with the forceps, should be an exact imitation of the mechanism of the expulsion of the head by nature. In other words, I am strongly convinced that, in the artificial extraction of the head, in occipito-posterior positions, we should make the forehead rotate backwards, and the occiput forwards, according to those rules which we have seen nature following under the same conditions. For here, as elsewhere, the more perfectly we imitate her principles, the more perfect will our own practice be. If the infant's head is of such a size as to pass with comparative facility through the maternal pelvis, we may, after seizing the head, forcibly pull it down and extract in the position in which it was originally placed, namely, with the forehead still looking anteriorly. But if the head and pelvis are more accurately fitted in size to each other, such efforts will be fruitless, unless at the expense of great and unnecessary bruising and compression of either the mother or infant, or both. Almost all authorities, however, in midwifery, seem to recommend and practise this direct traction. But the principle of the practice amounts to this—it is as if (reverting to a previous simile) we attempted to push or pull forcibly the spindle of a screw through its corresponding nut, in a direct and straight line, instead of effecting the same object with far more ease and simplicity, by revolving the former upon and within the latter. I have now happened to be called to several cases of occipito-posterior positions, in which the forceps had been applied with the greatest adroitness and dexterity; where, subsequently, every allowable degree of force had been employed, but employed in vain, to pull forth the head in its original position, with the forehead directed anteriorly; and where I have succeeded, with a tithe of the power

previously used, by adding to the requisite act of extraction a simultaneous act of rotation of the head, so as to turn the occiput anteriorly, and to the right, and the forehead posteriorly, and to the left.

Indeed, I sincerely believe, that such cases as those I have just spoken of, are not unfrequently regarded as unfit and improper cases for the forceps—and that, as a consequence, the child's head is opened and broken down by embryulcia—merely because the forceps have failed from the position of the head having been unattended to, or, if attended to, from the forceps not having been employed in a proper manner, in the attempts at delivery made with that instrument. An obstetric friend told me that some years since he received from nature a most instructive lesson upon this point. He had fixed a pair of curved forceps upon a head lying in an occipito-posterior position, and ineffectually pulled at it in that position, till he was afraid to pull more. He was resting for a pain or two, cogitating what step he should take next—and whether he should perforate the infant's head, or not—when a very strong uterine contraction came on. During the contraction, the handles of the forceps were wheeled round in his hand, and the head was expelled, with the occiput under the arch of the pubes, and the concavity of his forceps turned towards the concavity of the sacrum. Nature thus strongly preached to him how he should have acted in order to assist her.

Dr. Smellie knew the propriety of rotating as well as extracting the head in these cases. He tells us, that in 1745 he applied the forceps in a case in which the large fontanelle was at "the left groin." Under the efforts which he made at direct traction, and so as to bring the forehead out anteriorly, the instrument slipped off three times, one of the blades giving way. He was still (he continues), "loth to destroy the child by opening the head," or to apply a blunt hook, and "luckily thought" of trying the forceps again, and, turning the forehead backwards into the hollow of the sacrum—and by this last plan he safely delivered the infant. "This method (he ingeniously adds), succeeding so well, gave me great joy, and was the first hint, in consequence of which I deviated from the common method of pulling forcibly along, and fixing the forceps at random upon the head. My eyes were now opened to a new field of improvement, on the method of using the forceps in this position (the occipito-posterior) as well as in all others that happen when the head presents."

Unfortunately, Smellie's observations on this point appear to have been, in general, completely overlooked by his various pupils and followers. Wallace, Johnson, Denman, Hamilton, Ramsbotham, Davis, &c.—tell us to extract the head with the forehead directed anteriorly and passing under the arch of the pubes. They seem all afraid that if we acted otherwise, and rotated (as I believe we should do)—the forehead backwards from the left foramen ovale to the left sacro-iliac synchondrosis, we should produce a violent and dangerous twisting of the neck of the infant. We have seen, however, that in 29 out of every 30 such cases, nature produces exactly this same rotation of the head in this same class of cases, and without any risk or danger whatever to the neck of the child. But in order that our mechanism should be equally safe with hers, we must imitate nature in the process as nearly as possible, and only turn, or attempt to turn, the head after it has already reached the pelvic floor—never when higher—and only during a pain, when the trunk and head are compressed together by the uterine contraction into, as it were, one mass, so that the body readily follows the movements of the head. The highest authorities also in the Continental schools, seem to have similar fears regarding the rotation, and lay down the same plan of extracting the head in the position in which it is already placed, viz., with the occiput posteriorly. Even those obstetricians who know most perfectly the natural mechanism in such cases, totally disregard and deviate from that mechanism in their own instrumental procedures. Thus, Naegele himself advises us to bring out the forehead ante-

riorly, when we use the forceps in occipito-posterior positions of the head. But then, in explanation of this apparent inconsistency, we must remember that the different varieties of Levret's forceps, used by Naegele, and most other Continental practitioners, are so large and curved as not to enable us to rotate them and the head, after they are applied, without the most imminent hazard to the vaginal structures of the mother. It is in occipito posterior positions—above all others—that we see the superior advantage of employing a straight pair of short forceps—such as those of Dr. Denman or Dr. Ziegler. They enable us to rotate the head easily and safely, as I can testify to you from sufficient experience. If we employed a curved pair in this position, and tried to turn the head with them, we should be obliged either to introduce them at first, or extract them at last, with their concavity, instead of their convexity looking backwards—and, consequently, with great and unnecessary risk of contusion and laceration of the soft structures of the mother, from the projecting ends and sides of the blades.

*Northern Jour. of Med., April*, 1848, *p.* 216.

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197.—DIFFICULT LABOUR FROM MALFORMATION OF THE OS UTERI.—By G. Millert Davis, Esq., Surgeon to the Liverpool Fever and Workhouse Hospitals.

[The patient in this case was a strong, robust woman, twenty years of age. She was, when seen by Mr. Davis, labouring under strong, and apparently expellant pains, but on examination it was found that the labour had not progressed.]

The vagina was unusually short, not more than 2½ inches in length; every portion of it could be distinctly felt. A firm longitudinal band extended along the posterior wall, as though the vagina were puckered longitudinally, while, above, the vagina terminated abruptly in a pouch; the finger was passed over every portion in succession, and the pouch found perfect in every part; at the upper part of the vagina, a little anterior to the usual situation of the os uteri, an ill-defined crescentic margin was perceived terminating gradually behind in the parietes of the vagina. Immediately posterior to this margin the parietes of the uterus and vagina appeared thinner to the touch than in any other position; a small quantity of a dirty-coloured fluid flowed at intervals from the upper part of the vagina; no os uteri was felt; the head of the child was pressing down upon the vagina, and descended slightly with each pain.

[Mr. Davis concluded that it was an imperfect condition of the os uteri that prevented the progression of the labour, and he decided to make an incision into the part. He observes:]

Before proceeding to make an incision, another very careful examination was instituted, and now, during a pain, I distinctly felt an aperture large enough to admit a crow's quill in the position indicated as having felt thinner than any other part, immediately behind the crescentic margin; the opening could scarcely be perceived during the intervals between the pains; there were no lips, no elevation of margin whatever. At this time the upper part of the vagina was not more than two inches from the vulva, and on placing the patient on her back, separating the thighs, and opening the vagina with the fingers, this small aperture was seen perfectly, having the appearance of a circular hole, made by a punch, barely large enough to admit a director of common size, and through it the hairy scalp of the child was perceived.

A director, bent at an obtuse angle three-quarters of an inch from the point, was introduced into the cavity of the uterus through this defective os uteri, and passed directly backwards, in which direction an incision near an inch in length was made with a probe-pointed bistoury, guarded by means of a little adhesive plaster to within an inch of the point; a catheter having been previously introduced into the urethra, the cutting edge of

the bistoury was turned directly forwards, and an incision made to the extent of a quarter of an inch. The structure divided was of a firm texture, a quarter of an inch in thickness: not a teaspoonful of blood flowed, and the patient did not complain of pain. There were no bands on the sides which appeared to require division, and it was therefore thought advisable to wait and see the result of a few pains.

[In four hours' time, the os uteri was more dilated, and Mr. Davis resolved to wait, and at the termination of five hours and a half the os was still more dilated, but there were six bands discovered, stretching from the vagina to the os uteri, as if formed by puckering of the vagina. These were divided, but still the head did not descend. It was then thought advisable to open the head of the child, since there was no danger of rupture of the uterus, or laceration of the soft parts; the countenance also had become anxious, pulse 130, and there was cold perspiration.]

The perforator was therefore applied to the protuberance of the right parietal bone, the presenting part; a sufficiently large opening was made; the brain was broken up and escaped freely; the uterine contractions continued; the short forceps were applied, and traction made during each pain, and within a quarter of an hour the head emerged, the face turning to the inside of the mother's left thigh; the cord, which was round the neck, was slipped over the head; the shoulders and body were expelled by the uterine efforts, and the placenta was detached about ten minutes after the birth of the child; no laceration occurred; there was no hæmorrhage; the uterus contracting firmly; the patient was much exhausted; she was made comfortable, and forty minims of laudanum administered. The child was a large, well-made female child.

[This patient recovered well, and left the hospital a month after delivery. Dr. Davis adds:]

Previous to her leaving, I made an examination as to the condition of the vagina and os uteri. An inch within the vagina a distinct and firmly resisting ring was observed, and within this the os uteri flattened, and not protruding into the vagina, and of an irregular form; from the left margin of the os uteri, extending between it and the ring, was a firm, thickened band, resembling somewhat the contracted cicatrix of a burn, and a second band took its course along the posterior wall of the vagina.

*Med. Gaz., March* 20, 1846, *p.* 500.

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198.—USE AND ABUSE OF THE FORCEPS.—By JAMES WILSON, M.D., Glasgow.

[The object in the use of the foreceps is twofold—to preserve the life both of mother and child. No instrument may be used more safely, or with greater destructiveness, and too many are apt to believe that the use of these instruments may be acquired with little thought and preparation. This will prove a fatal mistake, and the lesson involved may be of serious moment both to the patient and practitioner. With respect to the introduction of these instruments Dr. Wilson observes:]

The directions for the introduction of the forceps may be given in a few words: having made sure of the position of the head, introduce the hand, well smeared with lard, within the os uteri: search for, and pass the fingers over the ear, so as to guide the blade over that organ, whatever may be its position. I have said introduce the hand, and this seems to have been the uniform practice of Smellie. There are, no doubt, cases requiring the use of the forceps, which will not admit of the introduction of the hand; but it generally can be accomplished, and it is by far the best and safest practice.

It is true the passing of the hand gives some additional pain, by stretching the soft parts, but these must speedily be far more violently stretched by the instrument and the child's head. If the hand is not previously introduced, the blades are very apt to be pushed up at random, as the scalp is

often so tumid as to render it quite impossible to recognize the sutures or trace their direction; and even when the sutures can be felt, an unusual depression or elevation of the chin may mislead us in our calculations respecting the passing of the blades; for although they may be passed over the sides of the head, they may not include the ears, nor have their points placed on the sides of the chin, which is the only safe way of acting with them.

Another great advantage derived from the introduction of the hand, is the protection it affords to the soft parts of the mother, and the integuments of the head. There is in general a small portion of os uteri which remains undeveloped, even when fully opened. When this undeveloped portion or small flap is closely applicable to the head, in passing up the blade without the hand is a guide, we are apt to pass the point of the blade on the outside of the os uteri; and the upper portion of the vagina being very tense, a very slight force will thrust the point through the vagina, and thus place the upper portions of the blades on the outside of the uterus, whereby the patient is likely to be destroyed, and the operator defeated. I believe this occasionally happens. I have often seen this exemplified, while my pupils have been operating on one of my machines, when they did not introduce the fingers so far as to pass them inside of the os uteri. In introducing the hand, a certain wavering motion of the fingers will enable them to pass when the space is very limited, and with much greater ease than when this kind of motion is not attended to. On introducing the blade, if the point is passed closely against the palm of the hand and surface of the fingers, with a wriggling motion as it passes upward, it will be next to impossible either to injure the mother or child's head. If either be injured, it may be considered an abuse of the forceps. I have observed that there is often great difficulty experienced in locking the instruments. This is a proof that one or both blades must be wrong; in this case they must be adjusted: and this in general is easily managed if one have a clear conception of the position of the head. No attempt should be made to extract till the locking is effected, otherwise destructive injury may be inflicted, and a failure may be expected.

When the instrument is locked, many are in the habit of tying the handles firmly with tape, and keeping them so till the delivery is effected. This is surely wrong. By doing so a greater degree of pressure is kept upon the child's head than is consistent with its safety. I never use any ligature of this sort; and in the intervals of acting, all pressure with the instrument may be, and ought to be removed from the head. I have no doubt this unnecessary pressure is occasionally the cause of the child's death.

With regard to the mode of acting with the forceps, many important points require to be distinctly remembered. If the head is pretty high in the pelvis, the different axes of the brim, of the cavity and outlet, must be constantly adverted to, otherwise we shall throw insurmountable obstacles in our way. With this view, the handles of the instrument require to be kept constantly back to the perineum, till some part of the occipital bone has cleared the arch of the pubes; should we bring the handles forward before this time, we shall prevent the occiput from getting under the arch; or should the head, in defiance of our misdirected force, advance in the proper axis, the forceps would be thrown off at the back part of the head; or, on the other hand, should we forget the axis of the outlet, and neglect, as is very often done, to raise the handles towards the pubes, but continue to extract in the axis of the cavity, the result will be, either that the instrument is thrown off at the face, or if it retains the head within its grasp, there will be complete laceration of the perineum.

[The powers of compression, traction, and leverage, Dr. W. remarks, are all, to some extent, to be brought into operation in using the forceps; but he says, compression ought never to be made beyond the extent of diminishing the child's head to three inches, in the transverse diameter; indeed, *the instruments* are seldom constructed to admit of more. We should be

very careful how we use traction. More than moderate force should never be used, for where this is done, it is a case that requires a different mode of treatment. Many practitioners never use the forceps as levers, that is, never give the instrument any lateral motion; but it is evident from the direction of the axis of the pelvis, that this is necessary, for, in order that we should adopt one extracting force to the progress of the head through the pelvis, we should pull in a circle, which we cannot do; but by using lateral motion we may bring down the head without much extracting force. This motion should, however, be very gentle, for fear of injuring the soft parts.]

There is another consideration, which, if constantly borne in mind and acted on, will contribute very materially to the safe and successful use of the forceps. I mean the quarter turn the head makes in its descent through the pelvis. For example, if we apply the forceps when the head is high, the one blade will be almost directly behind the symphysis pubis, and the other in front of the sacrum. Now, should we inadvertently, in an extraction, continue the forceps without change in this position, as the head advances, we should find it next to impossible to deliver. If we would succeed, the instrument must be held in such a way (loosely) as to permit the head to make its natural and quarter turn.

If the head does not make this movement spontaneously, it will become our duty to assist it in so doing, and turn the occiput as the head advances from the left acetabulum, so as to bring it ultimately under the arch of the pubes: a very slight neglect of this particular will be quite sufficient to defeat our purpose of delivery, or, if we persist and use greater force, we may destroy the child, and seriously injure the mother.

The want of tact, or of sufficient manual training in this operation, will, perhaps, be found the most frequent cause of failure and disappointment. It is a great mistake, both in surgery and midwifery, to suppose that perfect knowledge will insure success in the operative department of either branch. The head must be perfectly informed, but the hand must be no less perfectly trained. Operative midwifery, particularly this operation, is purely mechanical, and never will be properly performed without a long process of training. I will venture to assert that there are more failures with the forceps than in any other operation the practitioner may be called upon to perform; and I am convinced that the only way to acquire the tact and training so indispensable to success, would be the frequent and familiar use of obstetric machines. I would not, for any consideration, want those useful assistants, whereon I can test and try myself when I meet with any difficulty, so that I may be prepared to meet and manage similar cases in future.

I have reason to suspect that this mode of training is not sufficiently appreciated; and there is, I fear, a lurking belief that many of the operations in our profession may be performed intuitively, particularly operative midwifery. But as soon may we expect the mechanic to perform any of the manifold operations of his craft by reading or listening to lectures on them, without the toils and training of a long apprenticeship—or that the artist, from the knowledge alone of the principles of painting, should produce a finished picture—or that the stone should, as if by magic, assume the figure and animated form of some ancient statue by the first rude touches of the chisel and mallet—as to suppose the complex, and often dangerous operations of which we have been treating, and which generally involve the lives of two beings, can be either safely or successfully performed without a previous and sufficient manual training. I would not for a moment suppose that the artificial expedient here recommended is at all to be compared to the use of the forceps on a living subject; but as the great proportion of young men cannot possibly have an opportunity of using, or of seeing the forceps used on women during their academic attendance, it is surely better to exercise them on these machines, than to go forth into the world to

try their rude and untrained hands on delicate women, and thus bring discredit on a useful operation, and destroy those on whom they make their first attempts. *Monthly Jour. of Med. Science, May*, 1846, *p.* 321.

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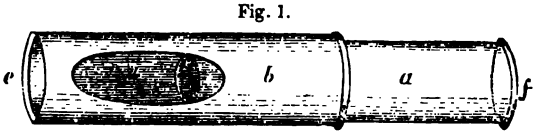
199.—PROPOSALS FOR THE IMPROVEMENT OF DIAGNOSIS IN THE INVESTIGATION OF DISEASES OF THE UTERUS, WITH AN ACCOUNT OF A NEWLY-INVENTED SPECULUM UTERI.—By PROTHEROE SMITH, M.D., &c.

[Dr. Smith has lately published a paper with the above title, in which he observes, that as the improvement of physical diagnosis is always calculated to advance medical science, so the simultaneous use of direct tactile examination and visual inspection of the diseased organ, in the investigation of uterine affections, would greatly tend to establish the accuracy of diagnosis. This object, which has never, till very recently, been attained, is supplied by the instrument under consideration. Dr. Protheroe Smith's speculum is certainly one of the best which we have seen described. Dr. Smith says:]

It admits of easy introduction, and permits of tactile examination prior to its application, which is readily accomplished, so that the instrument is passed into the vagina, and the part required is brought into view, whilst the finger still rests upon it, and accurately adjusts it to the open end of the speculum. This speculum is so simply constructed that any one, with very little practice, can adapt it so as to display the part he is desirous to see with unerring certainty, and whilst it is still exposed to sight, he is enabled with his finger to investigate further the physical condition of the organ, without any difficulty or chance of disappointment. When the operator is satisfied on this point, and withdraws his finger, the instrument presents a complete cylindrical speculum uteri, whose internal surface forms a powerful reflecting mirror, which throws a strong light upon the exposed part. By the same contrivance the finger may be again admitted, whilst the speculum remains adjusted, as often as further taxis is desired. Thus the difficulty referred to by Dr. Simpson is entirely removed, whilst visual inspection, together with tactile examination, are simultaneously brought to bear upon the physical diagnosis of uterine disease.

I will now proceed to a description of the instrument, and afterwards endeavour to explain the manner in which it is most easily employed. The speculum consists of a glass cylinder (fig. 1, *a*), accurately fitted to an outer one of metal (*b*), within which it slides. The metallic tube has its inner

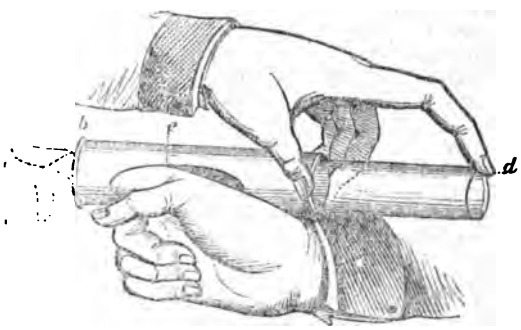
Fig. 1.




surface highly polished, the reflecting powers of which are still further increased by the glass cylinder which it contains. The edge of the smaller or uterine extremity is carefully rounded into a smooth ring (*c*), which projects slightly from the inner surface, facilitating its introduction per vaginam, as also presenting a limit to the further progress of the internal tube. In its side is cut an oval aperture (*d*), of about three inches in length, and two in breadth, and extending to within half an inch of the end of the cylinder. Its other extremity terminates in a rim (*e*), which projects about a line from the external surface of the tube, having its surface blackened, for the purpose of absorbing any rays of light which might otherwise be reflected, and impede the view by their dazzling effects. There is also a corresponding rim to the glass tube (*f*), by which it is most conveniently withdrawn from the metallic cylinder.

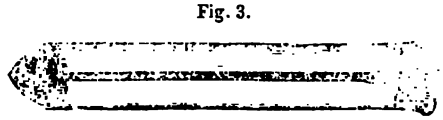
In describing the best mode of using the instrument, I would premise that the patient, during its employment, should lie horizontally on her left side, with the thighs bent upon the abdomen—the usual position in which women are placed in this country during parturition. After the ordinary examination with the finger, the speculum, well greased, is to be held by the rim of the external tube with the thumb and middle finger of the left hand, the ring and little fingers resting on the tube, and the forefinger upon the rim of the internal tube, which is to be previously drawn from out of the former to an extent sufficient to allow the introduction of the index finger of the right hand through the oval aperture, so that its knuckle or digito-metacarpal articulation should lie in the cavity of the cylinder (fig. 2, *e*).

Fig. 2.




The point of the forefinger of the right hand (*a*) thus projecting from the open end of the speculum, which should be held parallel with the thighs of the patient, is carried into the vagina, the rounded edge of the tube resting on its back (*b*), and is directed towards the inferior margin of the symphysis pubis, by which movement an oblique segment of the extremity of the instrument is readily passed within the vulva and os externum vaginæ, when, by pressing the perineum, by flexing the first and second joints of the examining finger (*c*), and at the same time by inclining the tube backwards in the axis of the vagina, it is at once admitted within the passage, and without difficulty conveyed to the os uteri. The finger employed in effecting the introduction of the speculum having accurately adjusted its open extremity to the part to be exposed, may then be withdrawn by gently pressing against the perineum and posterior surface of the vagina, during which process the internal tube is to be passed up to its full extent by the index finger of the left hand, which rests upon it (*d*). In this movement, all risk of including a portion of the lining membrane of the vagina is avoided, if the finger be not wholly removed from the passage until after the inner tube is completely introduced. The operation is then concluded, and the part exhibited by the speculum must of necessity be that which had before been detected by touch. Should it afterwards be deemed expedient to feel the part exposed to sight, it may be accomplished by withdrawing the internal tube to the same extent as at first, when the examining finger may be again passed through the oval aperture above mentioned, whilst the operator is viewing through the speculum the digital examination, which process may be repeated as often as is thought necessary, without displacing or removing the instrument. This speculum is also furnished with a conical plug, to facilitate its intro-

Fig. 3.



duction into the vagina, in cases where circumstances occur to render the other mode at all difficult, after which it may be withdrawn, as in the ordinary cylindrical speculum, and the finger passed through the oval aperture as already described. With the view to economzie space, I have contrived, by means of a double tube, sliding like a telescope, to make the stem of the plug subserve the purpose of a porte-caustic and mop.

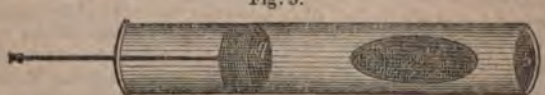
I have found this instrument of great use in examining the condition of the vaginal passage. With this view it should be passed per vaginam to its full extent, when by partially withdrawing the glass tube, a portion of the lining membrane is seen protruding through the oval aperture into the cavity of the cylinder, when by turning it gently round, every part of the canal may be successively brought into view. Thus it has been found to be of incalculable assistance in cases of vesico-urinary fistula, when the opening through the vesico-vaginal septum is so minute as to perplex the operator, if not to elude his search. The employment of this instrument likewise renders any operation in the vagina more practicable, by the complete manner in which it exposes the part, and at the same time affords room for the movements of the surgeon.

For the application of leeches to the os and cervix uteri, or to the surface of the vagina, it is equally well adapted, so that the difficulty which at times attends the use of this remedy, is hereby much diminished. To accomplish this, two fine wire-gauze tubes are supplied, similar in construction to those cups employed in leeching the surface of the body. One is adapted for the os uteri (fig. 4), and slides within the glass tube. The other, for the vagina,

Fig. 4.

(fig. 5), is made to fit the outer or metallic tube, and occupies the place of

Fig. 5.



the inner one. In the former, one extremity only is open, through which the leeches, previously placed within it, are brought into immediate contact with the os tincæ, by pressing on a wire which projects from the other extremity, and which is attached to a piston, which slides within the tube. In the latter (fig. 5), each end is closed, but there is an oval aperture similar to that of the metallic cylinder, within which it should be placed, containing the leeches, with its opening turned in a contrary direction to that of the outer tube. The speculum may then be introduced, and the leeches applied to the affected part, by turning the tube until the two oval openings correspond. This instrument also facilitates the use of the topical remedies to the uterus and vagina, so that nitrate of silver, &c., may be employed with great accuracy to any given extent. This operation, as well as that of leeching can be performed without the slightest exposure. Indeed, in the use of this speculum, the person of the patient ought never to be in any way seen, as, by adjusting her dress around it, nothing externally but the free end of the tube need be brought into view. I would here desire also to remark, that in offering the above observations, I wish it to be understood that I am very far from advocating the indiscriminate use of the speculum in the investigation of uterine diseases, but simply that whenever its aid becomes essential to correct diagnosis, the instrument I have ventured to bring before the profession will be found well adapted to that end.

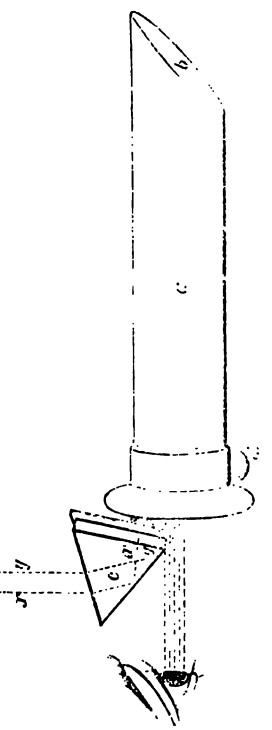
I will now concisely recapitulate the advantages which the use of this *instrument* affords, of which I have had satisfactory evidence in my own

experience, as well as in that of others. It offers to the profession the means of facilitating the diagnosis of the diseases of the uterus, by removing the chief impediments to the employment of the speculum—namely, the difficulty and uncertainty of its application. It enables the practitioner to expose to his view the precise part he discovers by touch, without risk of disappointment, whether it be the os and cervix uteri, or the surface of the vagina, and likewise to demonstrate it to others. It also simplifies the application of leeches and other topical remedies, without exposure of the person of the patient, and yet with unerring accuracy. And lastly it accomplishes the object, never heretofore attained, of employing simultaneously both visual inspection and tactile examination in the investigation of uterine disease.

[We believe that this instrument has already been adopted by many of the leading obstetric practitioners in Great Britain; and we are given to understand, that the statement which we made in Retrospect, Part X, respecting Dr. Smith being anticipated in this instrument by Mr. Coxeter, is incorrect. Dr. Protheroe Smith establishes his claim to originality in a letter which appeared in the Lancet, July 27, 1844.]

*Lancet, Feb.* 22, 1845.

[We perceive a variety of specula to be now before the public, some of which, we think, ought to be more extensively known and appreciated. There is one described by Dr. Adam Warden, of Edinburgh, which we think particularly well adapted for examination of the os uteri, when the anterior lip is more than usually large. Even in the most healthy state, the anterior lip is rather longer than the posterior, so that by means of specula which are perfectly circular at the extremity, it will often be difficult to obtain a good view of the posterior lip: but, by Dr. Warden's instrument, which is sliced off at the end, as illustrated in the accompanying wood-cut, the os uteri more easily slips into the end of the tube, and the view is more complete. In many cases the fundus uteri falls much more forward than usual, throwing the os and cervix uteri more downward and backward, so as to press almost upon the anterior wall of the rectum; in such cases, this speculum will be found very useful, and especially when assisted by the ingenious contrivances of Dr. Warden to throw a strong light upon the parts.

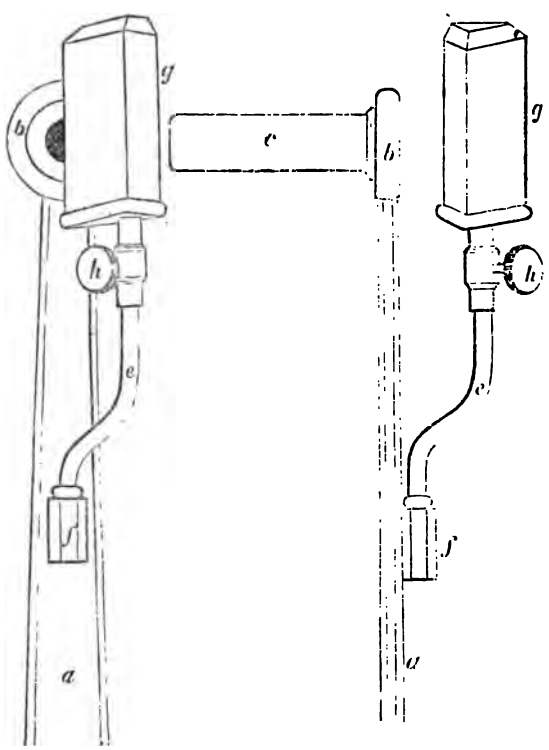


While on the subject of *specula*, we will take this opportunity, which we ought to have done in our last volume, of more particularly calling attention to the admirable instruments of Dr. Warden. When we are examining the different open passages in the body, as the ear, the throat, or the vagina, our own heads frequently interrupt the direct rays of light from impinging upon the object. Dr. Warden, however, has so contrived his prism, that the light may be placed in another situation, while the observer can look down the speculum without causing his head to darken the passage.

The accompanying wood-cuts will more easily illustrate our meaning. Although more especially adapted for the examination of the external ear, they will serve to show the principle which is in view, and which is brought into actual practice by Dr. Warden, in examining the os uteri and vagina. By the instrument which Dr. Warden formerly used to examine the throat, the image was inverted, but he now so manages the operation that inver-

sion of the objects does not occur, by substituting a prism affording a double total reflection. Dr. Warden describes his instrument for the ear as follows: the letters corresponding to those in the accompanying diagram:]

It consists of separate portions: a straight handle, *a a*, five inches in length, terminating in a ring, *b*, of half an inch internal diameter, the ring grooved in its interior as a screw. To this screw are adapted four canulæ, or straight tubes, *c*, of one, two, three, and four lines calibre, and another of a funnel or tapering shape, applicable to the dimensions of the auditory canal at different ages and under different degrees of constriction resulting from disease; the wider-mouthed canula is intended to be employed for preliminary exploration and removal of any accumulated cerumen obstructing the passage of the light, also for affording a proper field for the passage of instruments and other topical manipulation. The canulæ are an inch and a quarter in length, and terminate in blunted edges to prevent injury in their passage into the ear. From the middle of the straight handle, and at an angle with it of about 20°, arises a curved branch, *e*, moveable in a pivot joint at *f*, toward either side of the handle. This branch forms a stalk, on which a prism of flint glass, *g*, is perched erect, to the level of the opening of the affixed canula. The prism rests in a metallic socket, and is made to revolve on its own axis at the touch of the finger, or to remain fixed in any desired position by the aid of a small clamping screw, *h*. The instrument is thus complete for use. The canula is to be introduced into the ear to be examined, the patient being seated by a table, having a good light of a gas jet or argand burner at a convenient distance to one side. The surgeon being placed opposite to the ear to be inspected, a face of the prism is turned towards the light, and it is made to revolve until the lumi-



nous spectrum is conveyed to the bottom of the canula, and to the surface sought to be observed. There is no difficulty in the adjustment of position, when the relations of the light and the object are ascertained by a little experience; when this adjustment is made, the full and clear illumination of the object is at once obtained, and with a degree of brilliancy proportioned to the quantity of light employed in the particular observation. Where different circumstances require it, the intensity of the light may be artificially increased to any desired extent.

[Dr. Warden would even extend the use of his speculum to the examination of the rectum. He says on this subject:]

The advantage of Prismatic Illumination consists in the opportunity it affords of examining the recesses of the open cavities of the body by light of any desired intensity, and that placed on either side of the observer, so as not to be liable to be intercepted by his shadow, nor to interfere with the freedom of any operative procedure; and by the combination of two prisms, one placed at the external opening of the speculum, the other moveable within it, so as to traverse its extent, disease presenting itself at the opposite extremity of the tube may be fully inspected, while through the transparent sides of a glass tube, or the interrupted continuity of a metallic one, the whole surface of the passage may in succession be surveyed, and remedial appliances conducted to any point affected with disease. Thus the numerous and serious affections of the straight-gut, whose nature is often obscure, and the treatment uncertain and difficult, may derive all the advantages which light and the sense of sight are capable of contributing in other cases. And these advantages are not confined to the very limited extent to which touch can be carried in that particular situation. Those cases of highly-seated stricture which occur at the farther extremity of the straight bowel, and so are removed beyond touch, and all satisfactory management, may, by the method which I have proposed, be brought fully under examination, and have the treatment adapted with the same accuracy as in the more superficial affections.

*Edinburgh New Philosophical Jour., Oct.*, 1844.

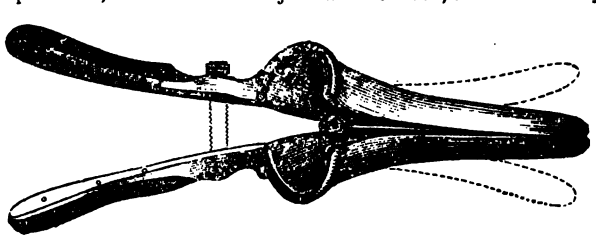
[At a meeting of the Royal Medical and Chirurgical Society, a new speculum uteri was exhibited to the members, invented by Mr. Fergusson, of King's College Hospital. It appears to possess many advantages. Its merits may be summed up as follows:]

1. There is a reflecting surface within, more brilliant than he has ever seen on any other instrument of the kind. 2. This surface cannot be tarnished or affected in any way, by the urine, discharges, lotions, acids, or caustics. 3. The instrument is cheaper than any other known of, excepting the common pewter one, which has many of the objections alluded to.

The tube is composed of glass, coated on the outside with silver leaf and varnish, then with cotton cloth, to obviate danger from the breaking of the glass; and, lastly, with caoutchouc, to give a smooth surface externally.

*Med. Gaz., Dec.* 19, 1845, *p.* 1484.

*Ricord's Speculum Uteri—its Application, &c.*—Blennorhagia of the uterus cannot be properly investigated without the aid of the speculum. The bi-valve speculum, of which we subjoin a wood-cut, is that used by M. Ri-



cord, and recommended by Mr. Acton. "It consists of two valves united at about the middle point, allowing both extremities to be widely opened; the narrowest part is thus placed at the vulva. To each valve a handle is attached, by which means space is gained, and the light falls upon the interior uninterruptedly, and pressure upon them causes a dilatation of the two extremities, which can be maintained, diminished, or increased by means of a screw." Its employment is very simple, but, like the catheter, it requires some practice.

The following are Mr. Acton's directions for passing the instrument:

"The patient should be placed on the edge of the speculum-chair, or on a bed, with a pillow under the head and shoulders, the thighs bent on the pelvis, and the legs on the thighs, the feet supported on two chairs. The surgeon should place himself between the lower extremities of his patient, and requires no assistant—an important thing in private practice. The speculum, previously warmed and greased with a white pomatum, is thus to be introduced:—holding the valves of the instrument firmly together with the right hand, the surgeon should separate the nymphæ by means of the index and ring fingers, while, by the aid of the middle finger of the left hand, he depresses the lower part of the vulva.

"This should be done gradually, but gently; at the same time the extremity of the speculum should be introduced, the handles turned towards the left thigh; the side of one extremity of the valve should press upon the middle finger; the other valve will necessarily be applied against the posterior surface of the meatus, along which the surgeon must pass it by depressing the instrument, without tearing or excoriating the mucous membrane. Immediately the speculum has passed the ring of the vulva, it should be directed in the axis of the pelvis, and the operator should separate the valves; by this means he is enabled to see the condition of the vagina and uterus, and, finally, the instrument will surround the neck of that organ.

"It is unnecessary for this purpose to employ a very long instrument, or push it on until the neck of the uterus is embraced, as this would expose the organ to laceration, and cause great suffering if the instrument should be caught in the cul de sac of the vagina, as often happens. To avoid this, we recommend that the situation of the neck of the uterus be previously ascertained by the toucher, so that the instrument may fall at once upon it; the neck of the uterus will be recognised by the smooth condition of the mucous membrane, and by its colour, which usually differs from that of the vagina. Useful indications for finding it may often be derived from the streaks of white-of-egg-like mucus, which flow from the uterus into the vagina. In spite of these indications and precepts, should the surgeon find the speculum entangled in the cul de sac of the vagina, instead of pushing it onwards, let him gradually withdraw the instrument, at the same time that the valves are separated, and the neck of the uterus will at once come into view." *Med. Times, Nov.* 22, 1845, *p.* 175.

[On this subject, the editor of the Medico-Chirurgical Review makes the following remarks:—"In our experience, the common cylindrical speculum, either of metal, or, as we prefer it, of glass, is the most simple, useful, and easily-applied instrument that we know of. It is quite sufficient for the examination of the cervix and vagina in most of the diseases of these structures, and for the application of local remedies for their relief. Sometimes we find the metallic two or three bladed speculum of use, when we want to expand the upper part of the vagina, so as to get room to twist off a small polypus, for instance, or to get at a vesico-vaginal fistula, &c. One of the practical difficulties which is met with in the exploration with the speculum, is to get the cervix nicely within its cylinder, and, for correcting any difficulty in this respect, M. Colombat has invented a kind of concave lever, with which he can draw this part within the speculum. We have seen other contrivances for this purpose, such as a long hole in one part of a metallic tube, or a moveable shutter, which may be drawn out of the specu-

lum, and thus allow a finger to enter and reach and re-dress the cervix. We usually find that a little patience, with a previous arrangement of position, according to the circumstances of the case, will generally be sufficient to effect this purpose, with the ordinary cylindical glass speculum without these mechanical complications. With reference to the position of the patient, either the back or side, or in some cases on the elbows and knees, on an ordinary bed somewhat raised, have each their facilities for exploration, and ought to be selected according to the peculiarities of the case. We have frequently adopted with advantage the half-sitting, half-reclined posture, with the pelvis brought to the extreme edge of a chair, and the trunk thrown backwards, especially when we have had to perform the very useful little operation of scarifying the cervix, which may in this way be completed without any mess or trouble."]

*Medico-Chirurgical Review, April*, 1846, *p.* 339.

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200.—INVERSION OF THE UTERUS FROM SHORT FUNIS.—By ROBERT SMITH, Esq., Aberdeen.

[Mr. Smith's patient was enduring very severe labour-pains, which suddenly subsided as soon as the child's head rested upon the perineum, and the most violent rigor set in. She became deadly pale, and covered with a cold clammy perspiration. Mr. Smith suspected rupture of the uterus to have taken place; he gave a stimulant, and afterwards an opiate. The rigor soon ceased, but as soon as it had done so, she gave a most terrific scream, and the child's head and shoulders were born. The by-standers, apparently suspecting, by their looks, that there was some mismanagement, could scarcely be persuaded to stay to give assistance. The patient still endured agonizing pain, and begged for the child to be taken away. Mr. S. extracted the arms, and on turning down the bed-clothes, the following appearances presented themselves:]

The infant, a boy, was lying on his back, apparently lifeless, his legs and part of the thighs retained in the vagina, and the funis so much on the stretch, that the skin of the abdomen was dragged out about an inch and a half. Having used smart friction over the region of the heart, he gave a slight scream, and having lifted him up towards the body of the mother, so as to relax the cord, the extremities passed out with a little assistance. The child was immediately separated, and handed to an assistant; but the mother still continued to complain of most acute pain. On making an examination, I found the placenta so near the os externum, that I thought I had nothing to do but to lift it out; but such was not the case, for I found it attached to the uterus. I immediately nibbled away the attachments with my finger and thumb with the greatest caution, and on removing the placenta, I said, "Now, you are all right, for the after-birth is away." "Oh no, oh no,!" said she, with a low and desponding moan, "I'm not right, I never was this way before, I'm still in great pain, but I cannot cry now." I immediately examined again, and found the *uterus* (fully three-fourths, according to the feel of it) *inverted*, the os girding it round like a cord, and of course I lost no time in reducing it; this was done with the greatest ease; and in order to insure permanent contraction, I thrust my hand into the cavity, which gave no pain, and having kept my doubled fist there for about half a minute, it gradually closed upon it, and thrust it out, precisely as if it had been another placenta. The mother was immediately bound up firmly, the pains having entirely ceased, and in the evening she was sitting up in bed, suckling her baby as if nothing had happened.

The patient lost very little blood, and complained of no pain whatever after the uterus was reduced. The funis was not more than six inches long, perhaps about eight when on the stretch. The placenta was remarkably small; the child was of full size.

*Monthly Jour. of Med. Science, May*, 1846, *p.* 359.

[While on the subject of displacements of the womb, in which we particularly include the different degrees of prolapsions, we must express our regret, that more efficient and simple means of keeping the os and cervix in situ, have not yet been invented. We are aware of the many contrivances which have been made public from time to time, most of them having to be introduced up the vagina, and kept in that situation by some force; but many of them are highly objectionable, and many are useless. The most disagreeable cases are those, of course, where the os and part of the neck of the womb pass, or attempt to pass, the external orifice; and if we could comfortably and firmly apply compression on the anterior portion of the perineum, so as considerably to diminish the size of the entrance of the vagina, we should be able to prevent many of these cases becoming extremely intractable.

The most simple and efficacious instrument for this purpose which has yet come under our notice, is one constructed by Mr. Eagland, surgical instrument maker, of Leeds. It consists of a soft padded bandage, which passes round the hips, being seated when on the body, on the sacrum behind, just above the hip-joint at the side, and upon the pubes in front, at which part are the necessary fastenings, one for obtaining the proper degree of tightness round the hips, the others situated near each inguinal region, or inner front of the thigh; to the back of the body bandage, just where it rests on the sacrum, is attached a strap, bearing a steel spring, at the extremity of which is a spiral spring, supporting an oval ivory compress, which is so arranged as to make pressure of almost any required degree on the anterior edge of the perineum, and partly on the external labia: this compress is retained in its proper situation by two straps passing up in front and fastening to the belt at the inguinal region on each side. The accompanying diagram, taken from Mr. Teale's work on Hernia, will convey a better idea of, and illustrate more particularly this instrument.

From the ample provision made for every possible contingency of attitude and motion, and the unerring certainty of its operation, we feel convinced it is far superior to the usual means employed to give support in these cases; the different kinds of pessaries are often highly objectionable, and if we can effectually, but gently compress the vaginal canal at its external aperture, the patient may be saved considerable inconvenience: such, at any rate, are the desirable effects accomplished by this instrument.

Mr. Eagland has also constructed another beautifully simple and ingenious instrument for prolapsus ani, which is applied much in the same way as the above, but differing considerably in its mechanical arrangements. This instrument we have found to be very efficacious in the most obstinate cases of prolapsus ani, and if it has not cured the affection, it has administered the greatest relief.]

201.—TREATMENT OF PRURITUS VULVÆ.

Having been a great many times consulted for the relief of pruritus vulvæ, and most frequently in pregnant women, I have rarely had occasion to order anything more than the following formula, viz. :—℞. Sodæ borat. ℥ss.; morphiæ sulphat. gr. vj.: aq. rosæ distillat. ℥viij. M. F. sec. art. mist. I direct the person to apply it thrice a day to the affected parts by means of a bit of sponge, or a piece of linen, taking the precaution first to wash the surfaces with tepid water and soap, and to dry them before applying the lotion. I can confidently recommend the prescription as suitable in most of the cases of this most annoying malady.—*Medical Gazette.*

*Dublin Medical Press, Jan.* 21, 1846, *p.* 40.

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202.—ON THE TREATMENT OF MENORRHAGIA.—By Dr. Ditterich, of Munich.

Dr. D. recommends the internal use of nitrate of silver as a remedy for this troublesome and obstinate complaint, as well as for the leucorrhœa which is present during the intervals and the nervous symptoms. The prescription is—℞. Nit. argenti, gr. iij.; aquæ distill. ℥ij. solve. Of this solution ten drops are to be taken two or three times daily, and gradually increased to fifteen drops. The author affirms that the use of this solution, for a period of from four to six weeks, will perform a certain cure. After the lapse of about ten days, the leucorrhœa diminishes, and by the second menstrual period, the catamenial secretion is reduced to the proper quantity, and the nervous symptoms disappear. Koph has also recommended the nitrate of silver for the same disease in doses of one-tenth to one-twelfth of a grain every two hours.—*Neues Repertorium*, 1845, *S.* 60.

*Northern Jour. of Med., Dec.*, 1845, *p.* 435.

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[Notwithstanding the increased size of the present volume, we find ourselves compelled, from want of space and time, to omit several very interesting articles, to which we advise the reader, if he wants further information on any of these subjects, to refer in the journals which we mention, viz. :]

1. On the Ophthalmia of Puerperal Women. By Robert Lee, M.D.—*Med. Chir. Trans., Vol.* 28, *p.* 345.

2. On the Application of the Actual Cautery to the Spine in Functional Diseases of the Uterus. By Dr. Mitchell.—*Dub. Med. Press, March*, 11, 1846, *p.* 148.

3. On the Cervix Uteri; its Physiology and Pathology. By Dr. Oldham.—*Med. Gazette, April*, 17, 1846, *p.* 667.

4. On Ulceration and Induration of the Cervix Uteri. By Dr. J. H. Bennet.—*Lancet, March*, 14, *&c.*, 1846, *p.* 294.

5. On Occlusion of the Os Uteri. By Dr. Corral.—*Med. Times, Jan.*, 10, 1846, *p.* 285.

6. Case of Cæsarian Section. By Dr. Long.—*Monthly Journal of Med. Science, Nov.*, 1845, *p.* 859.

Ditto. By W. Lyon, Esq.—*Ibid., Dec.*, 1845, *p.* 885.

Ditto. By J. Goodman, Esq., Manchester.—*Med. Gazette, Dec.*, 26, 1845, *p.* 1506.

7. On Ovariotomy. By Dr. Cormack; with remarks by Dr. Simpson, of Edinburgh.—*Monthly Jour., Jan.*, 1846, *p.* 54.

8. Case of Apparent Spontaneous Cure of Ovarian Dropsy.—*Ibid., Feb.*, 1846, *p.* 125.

9. Case of Ovarian Dropsy, treated by Pressure, &c., &c. By Isaac Brown, Esq., London.—*Lancet, Jan.*, 10, 1846, *p.* 33.

10. Case of Ovarian Dropsy, treated successfully by Mr. Brown's Method. By William Eccles, Esq.—*Lancet, March*, 7, 1846, *p.* 276.

11. Case of Ovarian Dropsy successfully treated by Thomas Hunt, Esq., Herne's Bay.—*Lancet, Jan.*, 24, 1846, *p.* 93.

12. Treatment of Ovarian Dropsy. By James Carson, M.D., Liverpool. —*Prov. Med. Journal, Feb.*, 25, 1846, *p.* 88.

13. Remarks on a Case of Ovarian Section. By Drs. Bennett and Handyside.—*Edin. Med. and Surg. Journal, April*, 1, 1846, *p.* 305.

14. Extirpation of the Uterus. By T. Gregson, Esq., Newcastle-on-Tyne.—*Med. Gazette, Feb.*, 20, 1846, *p.* 342.

15. On a Peculiar form of Puerperal Affection. By Samuel Lawrence, Esq., Montrose.—*Monthly Journal, March*, 1846, *p.* 161.

16. Amenorrhœa and Suppressed Menstruation, treated by the Bark of the Prunus Laurocerasus.—*North. Jour. of Med., Jan.*, 1846, *p.* 49.

17. On the Treatment of Abscess of the Female Breast by Compression. By Dr. O'Ferrall.—*Dublin Hospital Gazette, April*, 15, 1846, *p.* 257.

18. On Retroversion of the Unimpregnated Uterus. By Edward Rigby, M.D.—*Med. Times, Nov.* 22, 1845, *p.* 180.

# A SYNOPSIS,

CONTAINING A SHORT ABSTRACT OF THE MOST PRACTICAL ARTICLES IN THE FOREGOING PAGES OF THIS VOLUME; AND SHOWING AT A GLANCE, THE MOST IMPORTANT INDICATIONS OF TREATMENT BY DIFFERENT WRITERS, PUBLISHED WITHIN THE LAST HALF-YEAR.

## DISORDERS AFFECTING THE SYSTEM GENERALLY.

FEVERS.—*Typhus.*—The great indication of treatment is to produce fibrine, i. e., to separate the nucleus (the true representative of fibrine) from the envelope of each blood corpuscle. By giving chlorine (muriatic acid) and ammonia, alternately, this is accomplished. The envelope is decomposed, the nucleus remains undissolved. (Dr. Richter, p. 32.)

Dilute the system with nitrogenised matters, from the fact of ammonia or nitrogen being deficient in the system in typhus. After giving a full dose of castor oil, give 10 grains of carbonate of ammonia every six hours until the return of cerebral action, and then give aperients and quinine. Good beef tea well seasoned with spices and salt. Plenty of water and diluents. Port wine when the pulse will bear it. (Mr. Grantham, p. 29.)

When the circulation requires it, give wine under all circumstances of derangement of the functions. Two drachms of ether in the form of injections every two hours, when swallowing is difficult. Blisters in succession over the surface every six hours, over chest, abdomen, thighs, and legs, as stimulants to excite the capillary system. (Dr. Corrigan, p. 30.)

*Ague.*—Large doses of quinine (from 10 to 60 grains a-day) for four successive days, and intermitting it the six following days, thus embracing the interval comprehended in three fits; or

A large dose of quinine as soon as a fit threatens or takes place, and then omitted till another paroxysm comes on. Doses, from 15 to 30 grains each day, increased sometimes to 60 grains. (Dr. Graves, p. 25.)

Before giving quinine, relieve congestions of internal organs, which may occur even in anæmic subjects; and then give a large dose of quinine, followed by small doses, in order to keep up its stimulating or tonic effects on the capillaries. (Dr. R. Chambers, p. 26.)

Every sufficient dose of quinine or bark loses power by fractioning it, like a dose of wine; therefore give a large or full dose during or just after a fit, and also during the intermission: the second dose to be given on any day from the first to the sixth interval, then to be repeated after intervals of 7, 8, 9, 10, 12, 14, 16, 18, 22, and 30 days. Best time for the dose immediately after a light dinner, and the first dose just after an attack. A dose, from 15 to 20 grains of sulphate of quinine, or 3 or 4 drachms of cinchona will keep off the fit for about eight days. (Bretonneau, p. 28.)

*Scarlatina.*—As soon as the effloresence appears, and when the fauces are red, apply a solution of nitrate of silver to the inflamed parts in the throat (10 grains to the ounce); apply the camphor liniment combined with laudanum externally; and to a child of three years old, give half a drachm of diluted distilled vinegar, in syrup and water, every three hours; after fifteen years, give 2 drachms to a dose. The solution of nitrate of silver should be applied once or twice a day, by means of a bit of sponge at the end of a lead pencil. (Mr. Brown, p. 35.)

When there is dropsy, with albuminous urine after scarlatina, the epithelium separates from the mucous surface of the kidney, and there is a des-

quamation similar to that on the skin. Cutaneous action should be kept up until the renal secretion is restored, or all the consequences of Bright's disease may occur, and the patient die from the retension of urea in the system. It is in the mild forms that dangerous sequelæ are to be apprehended, the poison having been imperfectly, or not at all, eliminated through the skin. (Dr. Todd, p. 124.)

CANCER.—Use methodic compression, as recommended by Mr. Young. Apply perfectly smooth disks of agaric, laid over each other, and retained in situ by a roller. (Recamier.) Use a laminated plate of lead, modelled to the tumour, surmounted by graduated compresses. (M. Begin.) Dr. Arnott's plan of applying pressure by means of an air cushion and spring, is the best, as it makes equal and regular pressure on the tumour, and is applicable whenever a bony or other solid support exists behind the growth, where a point for counter-pressure can be had. (p. 168.) Give the following internally: ℞. Arsenici iodureti, gr. j.; ext. conii, ʒij.; M. in pil. xvi.; dividend. j. bis die s. Diet should be light and nutritious, and exercise moderate. (Dr. Walshe, p. 169.)

SCROFULA.—Give muriate of barytes in doses of from half a grain to three grains. When given to infants, add a syrup to diminish its irritant effects, and if there be spasm, combine it with some aromatic or antispasmodic. The following is a good formula: Muriate of barytes, muriate of iron, of each half a drachm; water distilled, syrup of orange peel, of each half an ounce. Or give half a grain of barytes in a tea-cupful of infusion of hop, or some bitter infusion, every morning fasting, gradually increasing the dose. Or give it in pill (the best way) in doses of one-twelfth of a grain three times a day, increasing the frequency of the doses, rather than the quantity in each. Barytes does not supersede iodine in these cases, but sometimes iodine does no good, or it does good only to a certain point, and then proves noxious; it is here that barytes is of the greatest service. (Dr. Walshe, p. 170.)

*Scrofulous Tumours.*—Consecutive to inflammation and suppuration of the lymphatic glands, apply the following ointment: Oil of cod livers, 15 parts; liq. of subacetate of lead, 8 parts; yolk of egg, 12 parts: make into a homogeneous ointment.

*Scrofulous Ophthalmia.*—Smear the margins of the eyelids with cod liver oil, twice or thrice a day, by means of a camel-hair brush, or feather. (Dr. Brefeld, p. 171.)

RHEUMATISM.—Give colchicum, but should the fever run very high, add bleeding and mercurial purgatives; if the pain be of a nervous character, give opium or morphia. The colchicum acts by eliminating morbid matter from the system. The urine becomes increased in quantity, or specific gravity, or both; there may be a sediment, or this may be eliminated as dissolved urea, and then there is no deposit. Continue the colchicum for a week or ten days after the pain has subsided, to get rid of rheumatic matter; combine it with a mild tonic, iodide of potassium, and a good diet. (Dr. Williams, p. 165.)

*Acute.*—Give one or two grains of opium every second or third hour, or ten, twelve, or more grains in the twenty-four hours. The opium is to be increased in dose, both as to frequency and quantity, until there is decided relief, and kept at that dose until the complaint is steadily subsiding. (Corrigan.)

Bleed, once or twice, in the robust only, and give gr. v. to gr. x. of calomel, with gr. iss. or gr. ij. of opium, every night, and a purgative next morning. Give also the following draught, three times a day:—vin. colchici, ♏x. ad. xx.; pulv. ipecac. co,; gr. v.; mist. salini, ʒx.; syrupi, ʒj.; M. Between the second and fourth day, and sooner, if tenderness of the gums occurs, omit the calomel, and continue one grain of opium at bed-

time, and in some cases at noon, as also the colchicum draught and morning senna purge. (Dr. Hope.) When sore mouth supervenes, instead of continuing the opium, if there be not much pain left, give quinine and iodide of potassium. Disease of the heart is rare under either Dr. Corrigan's or Dr. Hope's plan of treatment; if it does occur, give large and repeated doses of calomel and opium. If the disease become chronic, or the attendant fever is of a hectic character, give quinine or hydriodate of potash, in full doses. (Dr. Griffin, p. 162.)

*Chronic.*—Give the clear cod-liver oil, in doses of a tea-spoonful, and gradually augment the dose to a wine-glass full, night and morning. Do not give this oil where dyspeptic symptoms co-exist. The best vehicle is a thin infusion of linseed, flavoured with lemon peel, and sweetened to please the palate. (Dr. Bradshaw, p. 163.)

*Muscular.*—"Fire" the parts with the instrument used by Dr. Corrigan. (See Paralysis, p. 56.)

*Gouty Neuralgia.*—This affection, often called sciatic gout from its seat, is cured by an attack of regular gout. Give a mild mercurial course, with salines, especially alkaline diuretics; occasional moderate detraction of blood, either generally or locally; a light and lowly animalized diet; and a most rigid abstinence from all fermented liquors, especially porter and ale. The clothing should be warm: and give colchicum. (Dr. Robertson.)

In gouty inflammation, apply leeches, and keep up a gentle oozing from the bites by warm fomentations; then keep the part covered and apply a lotion made of one part of spirit, three of camphor mixture, and a little vinegar. Give colchicum to stimulate and increase the secretion of the mucous membrane of the bowels and to eliminate lithic acid and other nitrogenized elements from the system. (Med. Chir. Reviewer, p. 162.)

*Rheumatic Gout.*—Mix phosphate of ammonia, say ℥ss., in ℥vi. of distilled water; and give half an ounce of this either combined with small doses of musk or not. It decomposes the insoluble lithate of soda supposed to exist in the blood, and forms two new soluble compounds, phosphate of soda and lithate of ammonia. Give it for a considerable time where thickening of the white tissues exists; it deprives the blood of the lithic acid and soda, and creates a demand for them, which leads to absorption of these elements from the tissues where they have been deposited. This remedy is not intended to supersede the use of the lancet, and other remedies in acute rheumatism. (Dr. Buckler, p. 154.)

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## AFFECTIONS OF THE NERVOUS SYSTEM.

TETANUS.—*Traumatic.*—Give large doses of tincture of aconite prepared according to Dr. Fleming's formula. Watch the case very attentively. Dr. Fleming would not exceed a second dose of 5 minims two hours after the first. In traumatic tetanus this will not be sufficient. Give 18 or 19 minims in eight hours; the second day increase the dose to 32 minims in fourteen hours; third day, 25 minims in seven hours; and fourth day, 20 minims in two hours. Watch these doses unceasingly, and diminish them according to circumstances. (Mr. Page, p. 60.)

*Idiopathic.*—Do not depend so much on stimulants, but support the strength on nutritious diet, such as animal jellies. Give opium in large doses with hydrocyanic acid: also a well-sustained course of purgatives, as colocynth pills with castor oil; cupping over the spine; turpentine glysters. (Dr. Watson, p. 57.)

Try the hydropathic method of treatment. Envelope the patient in a cold wet sheet; over this place three or four good blankets; keep the patient in this condition for an hour, by which time the temperature of the sheet will probably be 100°. Then remove the coverings, and plunge the patient into

a cold bath; rub him quite dry, and envelope him again in blankets for six hours. Repeat this operation if the symptoms do not abate. (Mr. Preshaw, p. 60.)

HYDROPHOBIA.—Employ large doses of the tincture of aconite, as recommended in traumatic tetanus. (See Tetanus, Traumatic.)

DELIRIUM TREMENS.—Give opium and emetic tartar. Antim. potass. tart. gr. iv.; tinctura opii, ʒij.; mist. camphoræ, ℥viij. Mix, and give two table spoonfuls for first dose, and one every half hour afterward, until delirium abates or drowsiness comes on. (Dr. Graves, p. 96.)

When morphia and other narcotics fail, and the case is extreme, blister the back between the scapulæ, peel off the cuticle to the extent of three inches by two, and cover the part over with a layer of pure extract of belladonna. Within ten minutes there may be twitchings of the facial muscles, intoxication, pupils dilated, and drowsiness: immediately remove the belladonna, or even sooner. (Mr. Flood, p. 39.)

*Asthenic Form.*—The object is to support the strength and allay irritation. Give stimulants and opium. The attack has come on gradually, and the patient has lived on stimulants, without proper food; the system is impoverished. Give broth and nutritious diet, with moderate quantities of good wine, and full doses of opium.

*Sthenic Form.*—The patient has been intemperate for a short time only (during an election, &c.); he is otherwise robust: the case borders on inflammation. Do not give opium: apply leeches to the epigastrium or head; cold lotions. Do not commence by stimulating, nor by giving narcotics; although one or both of these methods may be ultimately required. (Dr. Corrigan, p. 41.)

MANIA (*Mental Excitement*).—In cases with great action or excitement without power, the great object is to subdue the cerebral excitement by procuring sleep. For this reason give occasionally tinct. hyosciam. mxxx.; tinct. humuli, ʒij.; camphor, gr. v. to x. Or, relieve visceral congestion by leeches to the rectum; or give a full dose of opium. In anæmic cases, it is often necessary to give a stimulant, or good nutritious food before a narcotic. A combination of opium and tartar emetic; or calomel and opium; or the infusion of opium with a bitter; or the hydrochlorate of morphia; or an opiate enema may be tried. Rub three or four tea spoonfuls of laudanum over the stomach; or rub the shaved head with liniment. camph. fort. combined with opium.

Apply a blister to the back, peel off a small portion of the cuticle, and apply the pure extract of belladonna for nine or ten minutes. (See Delirium Tremens.) When mania is periodic, give arsenic, tinct. ferri sesquichlor., zinc, copper, or tonics. Arsenic seems to alter the sensibility of the brain. It is, perhaps, better to keep the head regularly cold than to apply the douche. (Dr. J. Williams, p. 35.)

*Puerperal.*—Give opium and tartar emetic, as recommended in the treatment of delirium tremens. (Dr. Graves, p. 96.)

PARALYSIS.—In cases where there is no organic lesion in the central organs, "fire" the patient every day, if permissible, along the spine, thighs, and legs, or other parts. Mode of application.—"The iron consists of a thick iron wire shank, two inches long, inserted in a small wooden handle, having on its extremity, which is slightly curved, a disc or button of iron, a quarter of an inch thick, and half an inch in diameter. The face of the disc is flat, not spherical, like the French ones." Hold the button over the flame of a small spirit lamp, keeping the fore-finger about half an inch from the heated button. As soon as the finger feels uncomfortably hot, withdraw the button, and apply it as quickly and lightly as possible, at intervals of half an inch over the whole of the affected part, bringing the flat surface of the disc fairly in contact with the skin. A whole limb, or the back may thus be fired in a

hundred places, if necessary, in one minute. By looking sideways at the spots, the skin should look first of a glistening white, and, in a short time, of a bright red. (Dr. Corrigan, p. 55.)

When there is no organic lesion, but only a want of nervous energy, in cases of local and not general paralysis, as when a single muscle or a certain class of muscles are affected, as by the action of lead, make use of magnetic electricity. (Dr. Neligan, p. 43.)

In cases depending upon cold, poisons, molecular changes in the brain and nerves, give strychnine in doses from one-eighth to a quarter of a grain three times a-day. Do not exceed three quarters of a grain three times a day, and cease on the appearance of poisonous effects. (Dr. Favell, p. 55.)

EPILEPSY.—One great difference between epilepsy and apoplexy is, that in the former the respiratory movements are even more active, impeded, indeed, by the spasm of the glottis which often exists, whereas in apoplexy respiration is impaired; hence the coma of apoplexy is more dangerous; not so with epilepsy, in which respiration is even exalted. This may be owing to the circulation through the cerebrum being impeded, and by means of the circle of Willis, diverted to the medulla oblongata; hence the exaltation of the medullary functions in hysteria, epilepsy, &c. Hence also the greater liability to convulsions during sleep, the superior hypnotic influence of moderate doses of opium, which exalt the medullary while they impair the cerebral functions, and the wakefulness caused by prussic acid, which impairs the medullary functions. The great object of treatment is to equalize the circulation; not to allow one part to monopolize the blood at the expense of another. Bleeding is very exceptionable, as the cases often occur in anæmic subjects. Improve the vigour of the circulation, and even increase the quantity of blood. Apply cold to the head and spine, and heat to other parts; purge, give diuretics, counter-irritate. Advise regular exercise, warm clothing. Subdue the action of the heart by hydrocyanic acid, digitalis, henbane, valerian. Improve the general tone of the system; give nitrate of silver, zinc, copper, chalybeates, mineral acids, bark, quinine. Perhaps the best is the muriated tincture of iron. (Dr. C. J. B. Williams, p. 49.)

APOPLEXY.—When caused by intravascular congestion, plethora, or hyperæmia, deplete: when caused by extravascular effusion, the system is under the influence of shock, and does not bear depletion well. How shall we know the latter case? Vertigo is a good characteristic, coming on in the act of stooping, sudden change of position, &c. But the best plan is to feel our way by a small blood-letting, and watch the effect. When caused by hyperæmia or inanition, restore the equilibrium of the circulation by good diet, and improving the health; quinine, iron. In this case the relief from depletion is transitory. (Dr. M. Hall, p. 46.)

NEURALGIA.—"Fire" the parts affected, and do it repeatedly, if necessary. (Dr. Corrigan, p. 55, see *Paralysis*.)

Give three grains of sulphate of quinine, with one-eighth of a grain of sulphate of morphia, an hour before each expected attack, and then give five drops of tincture of Indian hemp three times a day, and rub some cajeput oil on the part affected. Continue the quinine three times a day, and increase the Indian hemp to seven and ten drops three times a day till relieved. (Mr. Hargrave, p. 66.)

Give colchicum, either alone or combined with other remedies, especially in cardiac neuralgia; and in this case, apply the tobacco leaf externally over the seat of pain: it should be slightly moistened, and removed on any symptoms of giddiness or sinking appearing. (Dr. Fife, p. 67.)

Make a liniment with one drachm of tincture of aconite of the shops, and seven drachms of fresh palm oil, or with two ounces of camphor liniment. Rub half a drachm or a drachm of the former, or double the quantity of the latter, into the part affected, twice or thrice a day, according to

its effects. It must be watched attentively, as the medicine is cumulative. If its poisonous effects appear, give a stimulant, as wine, or get the patient into the fresh air. (Mr. Kirby, p. 65.)

[See Retrospect, Part XII., Art. 9, for Dr. Fleming's interesting paper on this medicine; and for his formula for the preparation of his tincture of anconite, see the same article, page 41.]

*Facial.* (*Orbital.*)—Give half a grain of valerianate of zinc every eight hours, combined with two grains of extract of hyosciamus. Follow this with gentle purgatives. (Dr. Bell, p. 62.)

*Periodic.*—Give large doses of sulphate of quinine, from a scruple to half a drachm daily. Combine it if necessary with Fowler's solution of arsenic; but omit the arsenic unless unsuccessful with quinine and other remedies. (Sir B. Brodie, p. 62.)

When the sulphate of quinine fails, give the tannate of quinine in the same doses as the sulphate. (Dr. Hauff, p. 65.)

SCIATICA.—Apply a blister to the hip, peel off the cuticle and dress the part twice a day with one grain of hydrochlorate of morphia. Repeat the blister and morphia when necessary. Give also, three times a day, two ounces of guaiacum mixture, with 40 minims, or one drachm of the tincture of guaiacum; and apply some stimulating liniment. If these fail, try the internal use of turpentine. (Dr. Taylor, p. 61.)

"Fire" the parts along the course of pain, and, also, if necessary, across the loins. Do it repeatedly if requisite. (Dr. Corrigan, p. 55, see *Paralysis*.)

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### AFFECTIONS OF THE CIRCULATORY SYSTEM.

ANÆMIA.—Improve the general health and strength, and the quantity and quality of the blood. Iron forms the chief part of the hæmatosin which is contained within the external envelope of the red globules; therefore, this is one of the most important medicines by which to increase the quantity of the globules. It is better to give iron in small quantities for a long time, than in large doses for a short time. The first organ to be attended to will often be the stomach and digestive organs. If the stomach will bear it, begin with mist. ferri. co., or with tinct. ferri. sesquichlor., in a bitter infusion; or give the sulphate of iron combined with ext. gent., or with ext. hyosciam., and a little aloes or rhubarb. When there is œdema, combine the potassio-tartrate of iron, with bitartrate of potass. The iodide of iron is also an excellent preparation. Sometimes iron cannot be borne at first: in this case give the bitter infusions, or, if the stomach be irritable and neuralgic, give hydrocyanic acid, with a little muriate of morphia, or the oxide of silver: in this case a belladonna plaster over the stomach, and even one-third of a grain of extract of belladonna, three times a day, may be tried. It is impossible to anticipate all the symptoms which appear in anæmia; the case must be treated accordingly. (Dr. Turnbull, p. 69.)

HEART.—(*Functional Diseases.*)—*Palpitation*—Owing, 1st. to a distended stomach; and thus interfering with the descent of the diaphragm, and confining the heart's motions: 2nd. a distended colon pressing on the aorta, causing fulness of blood on the left side of the heart: 3rd. a distended stomach and colon pressing on the ascending cava, and causing a deficiency of blood on the right side of the heart: 4th. hepatic disease. Each of these states will require its particular treatment. (Dr. Bellingham, p. 77).

ANEURISM.—(*Compression in the treatment of.*)—Such an amount of compression is not necessary as to cause inflammation and adhesion of the opposed surfaces of the vessel, nor should the circulation in the artery at the point where it is compressed be entirely intereepted. To apply it successfully, the velocity of the current should be diminished, and the amount of blood

in the sac be diminished, so as to encourage the deposition of fibrine, until the sac is quite filled. It has this advantage over the cure of aneurism by ligature, that the artery is obliterated at the seat of the aneurism, by which the chances of gangrene are diminished. The cure is also more effectual, as the sac and also the artery leading from it, become *filled* with fibrine, whereas, after ligature, a loose coagulum remains which does not fill the sac. (Dr. Bellingham, p. 209).

It is not unfrequently found that the artery and its accompanying vein have become adherent, which is a great source of embarrassment to the operator, when tying the artery; this is avoided by adopting the treatment by *compression*. A moderate degree of pressure is all that is necessary throughout, so as not entirely to intercept the current of blood through the vessel. (Dr. Porter, p. 211).

*Aneurism by Anastomosis, or Nævus Maternus.*—Tie the tributary arteries in the neighbourhood. (Pelletan, Wadrop, Dr. Mc'Lauchlan.) Tie the arteries supplying the tumour, and then remove it by knife, securing the bleeding vessels with ligatures. (Syme.) Cut off the supply of blood to the tumour by making incisions around it, secure the bleeding vessels, and place pledgets of lint between the cut surfaces to prevent union taking place. (Dr. Gibson.) Use galvano-puncture for ten minutes at a time, with 15 pairs of plates. The pins introduced into the tumour should be numerous, and should cross each other at right angles; apply ice after the operation. (Dr. Petrequin.)

NÆVI.—Apply lint steeped in liq. plumbi, or solution of alum, and *strap* it over the part with a bandage; wet the lint without removing it, and keep it so applied for several weeks. Should this fail cut out the tumour, if no larger than a crown piece, and close the edges of the wound by twisted suture. (p. 231.)

SUBCLAVIAN ARTERY.—(*Ligature of.*)—When there is extensive swelling and suppuration, after the lesion of an artery, it is not advisable to cut down upon it, to tie it at the seat of injury; and when this is the case after wound of the subclavian, it is better to secure the artery beneath the scalenus, before it approaches the tubercle of the rib; it is much higher and more accessible there. (Dr. Warren, p. 222.)

POSTERIOR TIBIAL ARTERY.—(*Wound and Ligature of.*)—Take the wound as a centre, and cut down upon the vessel, and tie it both above and below the seat of injury. (Arnott). If it be a case of secondary hæmorrhage, and there is a good deal of coagulum in the parts surrounding the vessel, it will be advisable to tie the femoral artery. When there is a wound in the calf of the leg, with sufficient bleeding to warrant a belief that the posterior tibial artery is wounded, separate the soleus from its attachment to the tibia, cutting through the deep fascia, and secure the vessel. (Mr. B. B. Cooper, p. 217).

HÆMORRHAGIC DIATHESIS.—Apply to the bleeding part pads soaked in acetate of lead mixture, and cover it also with pulverized matico. Give the following mixture: ℞. Plumbi super. acet. ℥ss.; acid acet. dil. ℥ss.; syr. rhœad. ℥ss; aquæ ℥v. M. sumat cochl. ij. magn. omn. tertia hora. If the acetate of lead begins to affect the system, substitute for it the sulphate of soda. You must rely upon constitutional treatment. (Dr. Clay, p. 234).

EPISTAXIS.—Give the oxide of silver internally. (Mr. B. Lane, p. 103).

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## AFFECTIONS OF THE RESPIRATORY SYSTEM.

BRONCHITIS.—(*In Infants.*)—If very severe make use of the warm bath, and give one grain of calomel and two of ipecacuanha with a little compound tragacanth powder, every four hours; if less severe, three times a day, and

lengthen the period as improvement takes place. After the first or second dose, the ipecacuanha does not act as an emetic. When necessary to apply a blister to an infant, place a piece of tissue paper between it and the skin, or dip a piece of blotting paper into acetum cantharidis; apply it to the part, and in ten or fifteen minutes you will have a blister. (Mr. Miller, p. 88).

*Chronic or Subacute.*—Cause the patient to inhale the fumes of ammonia. (p. 90).

PNEUMONIA.—(*Chronic*).—Cause the patient to inhale the fumes of ammonia, in order to stimulate the parts. (p. 89.)

ASTHMA.—Dip a charpie-pencil into pure liquid ammonia and then into water, and apply it to the velum, uvula, and upper part of the œsophagus. Do not let it remain too long in contact with the soft parts, nor carry it too deeply into the throat; where there is emphysema, one application will be sufficient. The absorption of ammonia by the stomach will probably produce the same result, if given in sufficiently large doses, or its inhalation when diffused in the atmospheric air. (M. Guerard, p. 89.)]

APHONIA. (*Loss of Voice.*)—Inhalation of fumes of pure ammonia. (p. 90.)

ASPHYXIA.—Use cold affusion, and when respiration is fully established, open a vein. (Mr. Noyce, p. 238.) Cause the patient to inhale the fumes of pure ammonia. (p. 89.)

ŒDEMA. (*Of the Glottis.*)—When suffocation threatens, perform the operation of laryngotomy. (Mr. Crookes, p. 238.)

TRACHEOTOMY.—In children: lay hold of the trachea with a hook, and, having drawn it forwards, cut out a portion with a pair of scissors; or use Mr. Millikin's instrument, by which you can both fix and hook the trachea, and then cut out a circular portion from the cartilaginous rings. Mr. Read's improved instrument is a very good one; the cutting part forms a curve or obtuse angle with the handle. (Mr. Carmichael, p. 236.)

Perform the operation early. If you cannot avoid the thyroid veins, cut straight through them; the hæmorrhage ceases on the introduction of the canula. If the case be not very urgent, keep the edges of the wound apart by some instrument, for a short time before introducing the canula, in order to allow of false membranes being expelled. You may expedite this by dropping water into the bronchi, and sponging the trachea. If the canula become obstructed, remove it immediately and empty it, and when the canula is withdrawn introduce the dilator. After the fourth or fifth day diminish the size of the canula, and by the thirtieth day, it may be dispensed with. Drop into the air passages, fifteen or twenty drops of a solution of nitrate of silver (gr. v. to ℥j.), and cleanse the trachea with a sponge dipped in the same solution. (Trousseau, p. 237.)

PARACENTESIS THORACIS.—Do not allow air to be admitted through the canula if it can be avoided. It may re-kindle inflammation, or convert the adhesive into the suppurative inflammation. Unless the lung is capable of free and full expansion, do not attempt to draw off all the fluid: remove only so much as the expanding lung and the surrounding compressed organs are capable of replacing. Watch the opening carefully, especially during inspiration and coughing, and when the stream begins to fail, turn the patient on his punctured side till there is an alternate flow and stoppage of the stream during inspiration and expiration, then immediately withdraw the canula. Apply a flannel bandage with moderate firmness around the chest. *Precautions.*—1. Always introduce an exploring needle first, to know if the diagnosis be correct. 2. Do not puncture one side before it is presumed that the other is sound enough to carry on respiration. 3. Draw off the fluid slowly through as small a canula as the density of the fluid will admit. 4. Only draw off the fluid till the air seems to threaten to be admitted. (Dr. Hughes, p. 86.)

## AFFECTIONS OF THE ALIMENTARY CANAL.

HARE LIP. (*Operation for.*)—Make the incision from above downwards, nearly as far as the red margin of the lip, and stop before you have detached the cut piece; then direct the incision at a right angle towards the median line. Do the same on the opposite side, and then unite the two margins in their whole extent, except towards their free borders: the flaps formed by directing the incisions towards the median line are to be approximated. (Mr. Smith.) If the child be strong and healthy, and the fissure only affects the lip and not the bones, the operation should be performed a few days after birth. (Dubois). When the features are enlarged, there is more ground to work upon, therefore defer it until the first set of teeth have appeared. (Liston, p. 239.)

FRÆNUM LINGUÆ. (*New Instrument for dividing.*)—This resembles a pair of scissors; its blades are perfectly blunt and curved, and do not close completely, thus leaving an interval for the reception of the frænum. (Dr. Beatty, p. 245.)

CLEFT PALATE AND STAPHYLORAPHY.—Dissect the soft tissues from each side of the fissure in the palate, to such an extent as to make a flap broad enough to join its fellow of the opposite side in the mesial line, and stitch the whole between the uvula and the anterior extremity. Re-union to a considerable extent, takes place, and towards the inner margin of the bones, and also on the upper surface of the soft portion in the middle, there will be a cicatrix analogous to mucous membrane. (Warren.)

The soft velum ought to remain in a state of perfect repose, and for this purpose the levator palati, the palato-pharyngeus, and the palato-glossus muscles should be divided. This cuts off all motor influence in an outward, upward, or downward direction. For this purpose use a knife with a blade like the point of a lancet, the cutting edge being about a quarter of an inch in extent, and the flat surface being bent semi-circularly. Make an incision half an inch long on each side of the posterior nares, and divide the levator palati muscle on both sides, just above its attachments to the palate; then pare the edges of the fissure, and with a pair of long blunt-pointed scissors, divide the posterior pillar of the fauces, and, if it seems necessary, the anterior pillar too, the wound in each part being a quarter of an inch in extent; then introduce stitches by means of a curved needle set in a handle, the threads being tied so as to keep the cut edge of the fissure in exact contact. The first incision, that for the division of the levator palati, should be made midway between the hard palate and the posterior margin of the soft flap, just above the thickest and most prominent part of the margin of the cleft. You may commence cutting either at the end nearest you, as you stand behind the patient, or that furthest off, as may seem most convenient. For ligatures, those of stout silk, or flaxen thread, are the best; and it is of great importance that a sticth be used close to the lower end of the uvula, as there is a great tendency to separation there. The after-treatment the same as after ordinary operations, except that the parts are to be kept at rest as much as possible, and nutriment to be given by means of enemata of gruel and soups. (Mr. Fergusson, p. 240.)

PALATE.—(*Operations on.*)—In cases of small holes in the soft or hard palate, pencil their borders several times a-day with a concentrated tincture of cantharides. Inflammation and granulation come on and close the opening. Large openings are to be closed by suture, after paring the edges; and leaden wire is said to be preferable to silk, for ligatures, as it keeps the edges close together, and does not cut through the textures.

When there is adhesion between the velum palati and posterior wall of the pharynx occasioning deafness, and stopping the communication be-

tween the nares and air-passages, the adhesion must be divided transversely, by means of a long scalpel, about half an inch below the adherent border of the velum. The edge must be fixed by a hook, and drawn from the wall of the pharynx, then, with a lancet-formed knife, the surface of which is curved, directed upwards, the velum is to be loosened, and the separation completed by scissors, also curved upon their flat surface. The upper adhesions are to be destroyed by passing a blunt curved iron instrument, like a very small spatula, along the inferior nares. Next prepare a ligature with a small curved needle at each end; with one of the needles transfix the velum, a few lines from its edge, and bring it out at a high point on the anterior surface of the palate; the other needle must be used in same manner, a short distance from the side of the other; and the edge of the velum must be brought about half an inch from the palate. All mechanical means for closing the fissured palate, are not only injurious but dangerous; but if the size of the cleft, or other circumstances, render an operation unadvisable, then it may be covered with a gold palate, fixed to the teeth. In cases of holes in the palate, the edges of which are so callous that an operation would be unsuccessful, the opening may be stopped by wearing a double piece of Indian rubber, without fear of its being enlarged. Two pieces of Indian rubber, the thickness of pasteboard, are cut about four or five times larger than the opening, and between them a small round piece, and they are to be transfixed by waxed thread: thus, one plate lies on the anterior, the other on the posterior side of the palate, and the small middle strip in the opening. The patient can apply it himself, and it should be taken out to be cleaned once a week. (Dieffenbach, p. 244.)

CYNANCHE.—Make free incisions, varying them in depth and extent according to the case, in the following manner: Take a long-handled round-pointed scalpel, and having covered the blade with adhesive plaster to within three-quarters of an inch of the point, firmly press down the root of the tongue with the index-finger of the left hand, and make one or more free incisions in a direction upwards and outwards along the tonsil and velum to the base of the uvula. The throat to be gargled with warm water to encourage the bleeding; in other respects gargles are useless, since they cause motion in parts which ought to be kept at rest. (Dr. Makin, p. 91.)

BOWELS.—*(Acute inflammation of.)*—Where local or general depletion has been used, or where they cannot be resorted to, give two grains of opium, and then one-grain doses every two hours, until about 32 grains have been taken; watch the state of the bladder, and open the bowels with mild purgatives, combined with henbane. If the enteritis be intense, deplete; and should the system resist opium, give calomel, but substitute opium for it as soon as the symptoms give way. Do not give it in small doses, for then it checks the diarrhœa, but does not relieve the inflammation. If dysentery exists, combine it with ipecacuanha. (Dr. Griffin, p. 94.)

DYSPEPSIA.—When dependent on or complicated with a hyperæmatic or sub-inflammatory condition of the mucous membrane, direct the use of herbaceous aliment, as grapes, apples, strawberries, pomegranates, &c.; give them about an hour before breakfast, and in the intervals of meals. Should flatulence and fæcal accumulation arise, treat the former with soda and ginger, and the latter with a pill of aloes, capsicum, and quinine. (Dr. Dick, p. 96.) Or, give oxide of silver in half-grain doses twice a day, in conjunction with aperients and alteratives. In *gastralgia*, oxide of silver acts well as a sedative.

*Pyrosis.*—Give half-grain doses of oxide of silver in a pill, twice a day; where there is deep-seated pain, apply leeches to the epigastrium first. (Mr. Butler Lane, p. 107.)

CONSTIPATION.—Where there is no recognized stricture, strangulated hernia, or abdominal tumours, make use of an oleaginous enema, to five pints of which add an ounce of sulphate of magnesia, and a table-spoonful of common salt. In giving the injection, let the patient lie on his right side, with the pelvis considerably elevated; it should be administered very slowly, so that the intestine may be filled before it is distended, and when it contracts may force away the feculent matter mechanically. Use well-boiled oatmeal gruel with common salt and butter. (Dr. Hall, p. 97.)

When it arises from obstruction near the junction of the ileum with the cœcum, inject air into the bowels. (Dr. Todd, p. 103.)

When dependent on indolence of the bowels, warm water injections are injurious. Give a pill containing one-fifth of a grain of the extract of nux vomica every morning; it acts by rousing the contractile power of the intestine. It is particularly of service to the paralytic, or where the muscular tone of the intestine is lost by over-distension. Injections of catechu, krameria, and alum are useful, as they corrugate the muscular fibres of the bowels, and diminish the size of the pouches which may be formed in the intestines by accumulated fæces, particularly that in the rectum just above the sphincter. These astringent injections may be varied; they may be made of the red rose, krameria, oak bark, bistorta, catechu, alum, rhatany, nux vomica, &c. They should only be small, 10 or 12 ounces, and not retained many minutes, so that the muscular fibres may readily contract.—Or, introduce tents into the rectum. (Fleury.) Or, champoo it. (Recamier.) Or, give ox-gall; as auxiliaries, add drinks of vegetable bitters, a tonic diet, and exercise in the open air. (Dr. Teissier, p. 100.)

*Constipation during Pregnancy.*—Inject into the rectum a drachm of the inspissated ox-gall, dissolved in a pint of warm water. (Dr. Allnatt.) This may be repeated every four hours until relief is produced. (Dr. Aldis, p. 102.)

DIARRHŒA. (*Chronic.*)—Give half grain doses of oxide of silver, twice a day. (Mr. Butler Lane, p. 103.)

*Diarrhœa in Young Infants.*—Give castor oil with yolk of egg, and if necessary, add an opiate. Prescribe as follows for an infant of from two to four months old: ℞. Ol. ricini, ʒj. to ʒiss.; vitelli ovi semis; aq. aneth. fenaculi, a. a. ʒj. ft. emuls. sumat coch. parv. bis die. From two to six drops of laudanum may be added, but this, as well as its amount and frequency, must vary with the case. (Dr. Thomson, p. 104.)

HERNIA.—(*Radical cure of.*)—The means to be used are, excision of the testicle, incision of the sac, excision suture, and cauterization of the sac, ligature of the sac after incision of the integuments, acupuncturation, and insertion of gold-beater's skin in the sac. These means, however, do not prevent a fresh hernial descent, although they destroy the sac. The best means for procuring closure of the hernial aperture, are trusses, ligature of the sac, and its envelopes, and the cutaneous plug. Trusses should not press too powerfully on the abdominal parietes, or they may produce inflammation or irritation of the parts, or the walls of the abdomen may become atrophied; or if the pad be very small and convex it may produce elongation of the aponeurosis and muscle, and thus weakens the parts. The operation by ligature is attended with considerable pain, and even loss of life. There are two ways of introducing the cutaneous plug—the first, to detach a piece of integument from the neighbourhood of the ring, and introduce it into the aperture: the second is effected by drawing the loose scrotal integument into the inguinal canal, and to cause adhesive inflammation between the invaginated integument and the walls of the canal. M. Gerdy retains the invaginated integuments in situ by one or more suture. Mr. B. Cooper, in performing M. Gerdy's operation, stitched the invaginated skin to the tendon of the external oblique muscle, and brought out the needle an inch and a half above Poupart's ligament; the needle was gai n

passed into the canal, and brought out through the abdominal parietes as before, about four lines distant, and the skin between the two ends of the ligature was thus included and tied over a piece of bougie. (Mr. Teale, p. 247.)

*Strangulated.*—In order to determine whether the intestine be still living or not, wait a few moments after dividing the stricture, and see whether the discolouration becomes less intense; or press the blood out of the distended veins and see if they become rapidly refilled. If no evidence of circulation exist, cover the intestine with integuments, or with a moist sponge, and wait a little while; the surface of the intestine may then be carefully and slightly scarified with the point of a lancet, and perhaps a slight oozing of blood will take place, if so, however discoloured it may be, the intestines may be returned into the abdomen. Carefully press out the contents of the intestine and then replace it in successive portions; then pass the finger within the abdomen to determine that no portion of the intestine is engaged within the sac, and also to determine that the protruded knuckle of the intestine is not invaginated within a neighbouring portion of the intestinal canal. When gangrene has taken place, and is general, make an incision through the whole length of the gangrenous portion, and leave it to slough away. This opening allows the contents of the upper part of the canal to pass away; but if this does not take place without dividing the stricture, this must be done with as little disturbance as possible. The wound must be left open, to facilitate the free discharge of matters, and simply dressed with wet linen, frequently renewed. Mr. Travers does not recommend division but dilatation of the stricture. Sir A. Cooper divided the stricture generally. Mr. Key also advises it. Brasdor's practice of excising the gangrenous parts and uniting the divided extremities by suture is universally abandoned. Recent adhesions, if there be no gangrene, are to be destroyed by the finger or handle of a scalpel—adhesions of two coils of intestine is also to be treated in this way. (Mr. Teale, p. 249.)

It is recommended by some practitioners, as Mr. Key, &c., to return the bowel without cutting into the sac, as there is less danger of peritoneal inflammation afterwards. The objection to this practice is the possible gangrenous condition of the bowel, many of the symptoms of which are equivocal, so that it is the best practice, after all, to open the sac. The great mortality attending these operations has been increased by improper after-treatment, as the early exhibition of purgatives. (Mr. South, p. 251.)

*Enterotomy after operation for Strangulated Hernia.*—It sometimes happens that after the operation for strangulated hernia, and after the intestine has been returned, symptoms of strangulation remain; the part of the intestine is incapable of resuming its functions, and tympanitis comes on. Separate the edges of the incision, pass the finger into the abdomen, find the distended coil of bowel, seize it with a pair of forceps, and by means of probe-pointed scissors, make an opening into it, through which the contents of the intestinal canal may escape; many a life may be saved by these means. (M. Maissoneuve, p. 254.)

ANUS.—(*Artificial.*)—After the bowel has been strangulated so long that gangrene of a portion has taken place, and an artificial anus is formed, either by the knife or by sloughing, and the stools are passed out of the opening, try the very ingenious method adopted by Mr. Trant, of Dublin, which consists of introducing a small silver tube (made by Mr. Millikin, of Dublin), and pressing back the intermediate portion of the intestine lying between the abdominal and anal position of the artificial opening, and thus bring the parts into such relation that the stools can pass into the natural channel. In this way the opening may be gradually closed, and the functions of the part restored to the normal state. (Mr. Trant, p. 262.)

*Fistula in Ano.*—Pass a ligature through the fistula, bringing it out at the

anus and gradually tightening it upon the included part; use a catheter wire, about as thick as small twine. (Dr. Colvan, p. 261.)

HÆMMORRHOIDS.—Where the case is recent, and the protruded piles not large, the bleeding small, and the constitution not affected, give a few grains of blue pill and rhubarb at night, and a little infus. rosæ and epsom salts in the morning, for a few days; after which give the ordinary electuary of senna, sulphur, cream of tartar, and mel rosæ, or, what is better, treacle, as the mel rosæ often gripes. Also inject into the rectum a pint of cold water with a drachm of nitre dissolved in it; enjoin steady exercise, and moderation in diet. In thin delicate subjects, give tonics, particularly mist. ferri aromatica; and if there be any serious organic mischief, particularly of the chest, interfere with the piles as little as possible. When the patient is becoming debilitated from the pain and irritation, as well as from bleeding, then remove the protruded hæmorrhodial portions of the bowel, having secured them by ligature. (Mr. Hamilton, p. 257.)

*Internal Bleeding Hæmorrhoids.*—Inject after every alvine evacuation, solution of acetate of lead ʒj, to ℥viij of distilled water; use two ounces of the solution for each injection; give an occasional blue pill, followed by a dose of castor oil and extract of taraxacum. To remedy the constipation usual in these cases, give the following confection: common resin, well powdered, one ounce; clarified honey, five ounces; half an ounce of balsam of copaiba renders it more efficacious, but is apt to disagree with the stomach. (Dr. Watson, New-York, p. 257.)

LIVER (*Congestion of*).—In diminished secretion, with pale or white stools, give mercury. In excessive secretion: increase the amount of oxygen inspired, and thus, during respiration there will be consumed materials that would otherwise be left for the liver to excrete; for while the carbon of the lungs is united to oxygen, and excreted in a non-combustible state, the carbon of the liver is non-oxygenized, is still combustible, and is intended, not for excretion, but absorption. Limit the supply of food which contributes to form bile, as spirituous liquors, butter, cream, fat, sugar, &c. The patient ought not to sleep immediately after a full meal, nor take suppers. (Dr. Budd, p. 106.)

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## AFFECTIONS OF THE URINARY ORGANS.

URINARY DEPOSITS.—*Apparatus.*—A microscope, with a power of 300 diameters; test glasses; phials containing nitric and acetic acids, water of ammonia, and potash; some slips of blue and reddened litmus paper, and an urinometer.

*Diagnosis.*—Notice whether it be colourless, amber, saffron, red, &c., transparent or turbid; ascertain by litmus paper whether it be acid, alkaline, or neutral; note its specific gravity; set it aside to see if it deposit a sediment, or throw up a cream to the surface, or crystallize on the sides of the vessel. The urine should be recent, and if the patient have leucorrhœa or be menstruating, should be drawn off by a catheter; take care to have the vessel clean.

*Urates* are in excess when the urine is acid, deposits on cooling a red, pink, buff-coloured, or white precipitate, covering the bottom of the vessel with an even powdery deposit, usually copious, and dissolving by heat; viewed by the microscope, a powdery appearance; dissolved in nitric acid by a gentle heat, evaporated to dryness, and held over the fumes of ammonia, murexide of a beautiful red colour is formed.

*Uric Acid.*—Urine highly acid, and deposits on cooling a red, pink, or buff-coloured sediment, adhering to the sides of the vessel in hard crystalline grains, having the appearance by the microscope of diamond-shaped plates

or prisms; the precipitate is generally scanty; forms murexide the same as the urates, with nitric acid and ammonia.

When the urine is acid, alkaline, or neutral, but turbid on emission, and deposits a white or yellowish sediment, and is not rendered transparent by heat, there will be present, phosphates, oxalate of lime, cystine, mucus, pus or blood; if the

*Phosphates,* it is rendered apparent by acetic acid; the earthy phosphates appear as amorphous powders by the microscope, the [ammoniaco-magnesian, as triangular prisms.

*Oxalate of Lime.*—Not affected by acetic acid or ammonia, but rendered transparent by nitric acid; deposit when viewed by the microscope consists of octohedral crystals.

*Cystine.*—Rendered transparent by solution of ammonia; viewed by the microscope it consists of five-sided plates, clouded in the centres.

*Pus or Mucus.*—The sediment is whitish, and not dissolved by any of these agents; viewed by the microscope it consists of minute irregular spherical bodies with granulated surfaces.

*Blood.*—Sediment red, and not dissolved by nitric acid, heat, or acetic acid; by the microscope it consists of minute yelllowish bodies, the shape of a shilling.

The dissolved constituents in diseased states of the urine, are:

*Bile.*—To detect it, drop the urine and nitric acid a short distance from it on a plate of glass; as they meet examine them with an achromatic microscope, and if bile be present, a green colour will be produced.

*Albumen.*—Sp. gr. 1,014, or lower; heat coagulates the albumen, and this cannot be redissolved by nitric acid; nitric acid coagulates the albumen.

*Sugar.*—Sp. gr.: 1,025, or above; taste sweet; boil the suspected urine with an equal bulk of water of potash, if sugar be present the liquid will assume a deep porter or beer colour.

TREATMENT:—*Lithic Acid deposits.*—Give gr. x. or ℈j. of bicarbonate of potash or soda, three times a day, and if the deposit be in the form of rhombic prisms, indicating gout, give colchicum, using local antiphlogistic measures, if the urine be sanguinolent or albuminous, and there be pain in the loins. If the deposit be amorphous, there is either excessive secretion of the solid constituents of the urine, or a deficiency in the secretion of water. In the former case, the sp. gr. is increased in proportion to the quantity; give iodide of potassium three times a day in doses of 5 or 10 grs. In the latter, the quantity of urine is decreased, there will be fever either idiopathic or symptomatic, which must be removed, or dyspepsia, in this case give a scruple of alum three times a day in half a pint of water. If the sediment have a pink colour, attend to the biliary functions.

*Weakly Acid or neutral urine.*—This shows that the kidneys are inflamed. If acutely, use general and local depletion, and exhibit emollients and contra-stimulants; give ℈j. doses of iodide of potassium. If the inflammation be chronic, use local depletion and counter-irritation; setons are very useful; occurring during typhus, apply blisters to the loins, and give wine.

*Oxalate of Lime deposits.*—At first give tonics, the mineral acids, vegetable bitters, astringents, &c.; and after some time give alkalies largely diluted. Alternate these plans, and persist steadily in their use. The following is a good tonic in these cases:—infus. cascarill. ℥vj.; potass. nitrat. ℥j.; acid. nitrici dil. ℥iss.; tinct. opii ℥j. M. sumat. cochl. duo ampla ter in die.

*Albuminous Urine.*—Use active depletion, both local and general; give nauseating doses of tartar emetic, and hydragogue purgatives; use the warm bath; give alkalies. Persevere in this treatment, but should the strength fail, and a cachectic state come on, depend on active counter-irritation, especially by setons. (Dr. Aldridge, p. 134.)

*Albuminous Urine after Scarlatina.*—If seen early adopt antiphlogistic measures; and when active is succeeded by passive congestion, give two or three grains of acetate of lead three times a day, to prevent the

drain on the system, and then give muriated tincture of iron, to repair the anæmic state of the system. (Dr. O'Ferrall, p. 124.)

*Diabetes Mellitus.*—The sugar in this disease is formed not only in primary but also in secondary assimilation from the tissues, as the emaciation proves; hence the rigorous exclusion of non-azotized substances is not advisable, as it forces the diseases to attack the living tissues, therefore allow at least farinaceous food. (Dr. Dick, p. 122.)

Exalt the tone of the secreting capillaries of the kindeys by balsams, ammonia, strychnia, and other excitants, when the perspiratory secretion is suppressed; if it be not, give chalybeates, alum, sulphate of zinc, or other metallic astringents: give a moderate portion of animal food, porter, &c., but do not enjoin a strictly animal diet.

*Diabetes Insipidus.*—Give antispasmodics and mineral tonics, and apply stimulating liniments to the spine.

*Purulent Deposits in the Urine.*—Give tonics, to subdue the asthenic inflammation of the mucous membranes; decoction of the leaves of chimaphila corymbosa, diosma crenata, arctospaphylos, uva ursi, or the root of cissampelos pareira, combined with mineral acids; also give chalybeates.

*Hæmaturia.*—Treat this disease in the same way as other vicarious discharges: give astringents, as tannin; or styptics, as oil of turpentine; when you give the latter be on your guard against nephritis. (Dr. Aldridge, p. 135.)

*Bright's Disease, or Albuminuria.*—Enjoin a general tonic regimen, avoid as articles of food, fat and other highly carbonised materials, attend to the functions of the skin and bowels, relieve congestion of the gland, and, if necessary use small bleedings. (Dr. Johnson.) Make use of cautious small blood-lettings in the early stages, particularly if acute; give hydragogue cathartics, and improve the general health: do not deplete where the disease is chronic. (Dr. Williams.) In the very early stages change the mode of life and habits of the patient, enjoin pure air and careful attention to diet and exercise; in this stage application for relief is seldom made. In the second and third stages, relieve congestion; promote the flow of urine and the action of the skin, and prevent the deposition of fatty matters by a diet which contains neither fat, nor butter, nor any of those non-azotized substances nearly allied to it, as starch, sugar, potatoes, &c. (Dr. Todd, p. 110)

In the *acute* form, remove congestion of the kidneys by bloodletting, regulated according to the intensity of the disease and the patient's strength; restore the function of the skin, by keeping the patient in a warm atmosphere, giving mild diaphoretics, and the use of the warm or vapour bath. Dr. Barlow gives tartar emetic. Next, remove the dropsy, by diuretics and purgatives, nitrate of potash, in doses of two scruples or more, with digitalis and cream of tartar; the nitrate should be largely diluted.

In the *chronic* form, first attend to the function of the skin by warm clothing, diaphoretics, and the warm bath. Give tincture of cantharides in doses of from four to twelve drops, in some emulsion (Dr Bright); Dr. Wells and M. Monneret advise thirty to sixty drops in twenty-four hours; or give ioduret of iron (M. Gutbrod); or hydriodate of potash, and use iodine ointment (M. Alken); or give chalybeate tonics, saline purgatives, and nutricious diet (Dr. Rees); or equal parts of tinct. of cantharides and tinct. of sesquichloride of iron (Dr. Copland).

Treat the *dropsy* with cream of tartar and digitalis (Dr. Christison), give from a drachm to a drachm and a half of the former three times a day, and at the same time a pill containing one or two grains of powdered digitalis, or twenty drops of the tincture in cinnamon water: give a blue pill (grs. 5) every night for four or five nights. Diuresis may often be established by an emetic of ipecac., and tartar emetic, or by a hydragogue cathartic; should these fail, give squills, broom, spirit of nitric ether, or Hollands and water, or carbonate, nitrate, or acetate of potash; or decoction of horse-

radish (Rayer). Diuretics do not cure the disease, they can only relieve the dropsy.

Try seidlitz or Pullna water; cream of tartar in half ounce doses (Rayer); give five, seven, or nine grains of gamboge, once every two days, triturated with bitartrate of potash, to prevent griping. Combat the concomitant affections of the digestive organs with creasote (Dr. Christison); give it as a pill, one drop of creasote, two grains of rhubarb, and one grain of extract of gentian, for the mass; or with the sedative solution of opium; or with extract of opium and nitrate of silver, half a grain of each in a pill. Apply sinapisms, turpentine epithems, or a cantharides blister, externally; sprinkle the blistered surface with muriate of morphia; check diarrhœa by chalk, astringents, and opiates; or give acetate of lead with opium, or strychnine with opium. (Dr. Wood, p. 120).

INCONTINENCE OF URINE (*the result of stricture*).—Endeavour to remove or relieve the stricture by bougies or catheters; when these fail, the lancetted stilette (Mr. Stafford's), may be sometimes resorted to with advantage. It is a dangerous instrument, and should be used with great caution. It should be firmly pressed against and then through the stricture, and after it be withdrawn a catheter should be introduced (Lawrence). The tone of the bladder, after retention of urine, may be restored by giving ergot of rye in two-scruple or drachm doses, twice a day, about an hour or two before the bladder begins to feel uneasy from the accumulation of water. (Braithwaite, p. 297.)

LITHOTRITY.—The best instrument for performing this operation with, is the two-branched curved instrument of Baron Heurteloup. A new instrument, by means of which a large calculus may be ground to powder in a few minutes, by oscillatory movements, it is worthy of attention. (M. Leroy, p. 273.)

Prepare the patient for the operation by enjoining a light diet, abstinence from fermented liquors, clear out the bowels, and order the hip-bath; if the urine be acid, give alkalies combined with uva ursi or Peruvian bark; if alkaline, give the mineral acids; and if mucous deposits, infusion of Pareira brava; enjoin absolute rest, and use occasionally an anodyne enema. The urethra is to be gradually dilated, if necessary; when preternatural contraction of its orifice exists, divide it. Introduce the catheter frequently, as it allays the irritability of the bladder and urethra. The objects of the operation are to reduce calculi within the bladder to such a size that the portions may be removed or discharged through the natural passages, to effect this by such means as shall excite no dangerous irritation in the urinary organs, and to free the bladder from the small fragments which remain. Great care should be taken that the case be a suitable one for the operation, as in some cases cystotomy must be preferred. Lithotrity may be performed where the bladder is perfectly healthy and the stone is small; and it is decidedly advantageous where there is phthisis or albuminuria. It is a great and valuable addition to chirurgical therapeia, but cannot be considered as a substitute for cystotomy, since there are numerous cases in which the last operation will prove the safest and most effectual.

*Cystotomy*, for example, is preferable in boys before the age of puberty: it is so simple and the urethra is so small as not to admit of the lithotrite. Cystotomy is also preferable in the female; also where the calculus has attained a very large size; also where the prostate gland is enlarged, unless the calculus be of very small size. (Sir P. Crampton, p. 266.)

PROSTATE GLAND—*Enlargement of*.—Charge a bougie with iodine, or iodide of potassium, and then dip it into melted tallow, so that a coating may be formed upon it; then introduce it up the urethra to the part desired, and let it rest upon it until the tallow melts, and the iodine, &c., comes in contact with the diseased part. The preparation of iodine must at first be very

mild; a grain of iodide to the drachm of lard, gradually increased in strength as the patient can bear it, to two, three, four, five, and even ten grains, or a scruple to the drachm: after this, add iodine to it, half a grain, gradually increased. The bougie must be introduced with great care. (Mr. Stafford, p. 273.)

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### AFFECTIONS OF THE ORGANS OF GENERATION.

SYPHILITIC AFFECTIONS.—*Chancre.*—Wash the part well with warm water, and then apply the solid nitrate of silver; it will completely destroy the affection, if not more than of three days' standing. If it be a pustule, evacuate its contents, and the walls of the pustule are to be well cauterised. When there is a chancre of the frenum, it is more readily healed by dividing it, and cauterizing the whole of the divided surface. To check discharge, apply a solution of pure tannin—two grs. to the ounce of water; or sulphate of zinc solution, in private practice, as the former tells tales by staining the linen. The caustic should be reapplied as soon as the eschar is removed, or about once in twenty-four hours. If lint have been applied after the caustic, take care to soak it well before you remove it, or the eschar may be detached, and the part made to bleed. If the case be seen early, one or two burnings will suffice; if at a more advanced period, it must be repeated at intervals of twenty-four hours—for a week or ten days, or as long as we consider any virus is secreted by the sore, which is known by the ulcers remaining stationary, and the surface being covered with a yellow pellicle; when becoming healthy, granulations spring up and the sore heals. Caustic is not so efficacious when the chancre is situated on the frænum, orifice of the urethra, around the prepuce, or on the fourchette in the female;—enjoin rest and strict attention to cleanliness, and avoid rupturing the cicatrix. (Acton, p. 274.)

*Buboes.*—Apply a blister the size of a crown for twenty-four hours, then raise the cuticle, and apply a pledget of lint of corresponding size, well saturated with a solution of bichloride of mercury (a scruple of the salt to one ounce of spt. vini rectif.); keep it in situ from two to four hours, and then apply cold applications for some hours; an eschar is formed, which will be thrown off, and the tumour will be dispersed. (Malapert, p. 283.)

*Gonorrhœa.*—Inject the urethra with a solution of copaiba. (Ricord p. 294.)

*Chordee.*—Give from 25 to 50 minims of the vin. sem. colchici, for several successive nights. (p. 295.)

Or, vin. colchici, ℥ij.; magnes. carb. ℥j.; iodide of potassium, ℥ss.; aquæ, ℥vss. M. ℥j quartis horis sumend. Or give a combination of iodide of potass and decoct. sarzæ comp. (p. 295.)

*Gleet.*—Apply the following ointment, which answers much better than the nitrate of silver: kino, ten parts; sulphate of zinc, one part; lard twenty parts. (Dr. Leroy, p. 290.)

*Stricture.—Dilatation.*—There are three modes of performing dilatation. 1. Slow or permanent; the catheter is left in the urethra and changed every three or four days. 2. Continuous or sudden; changing the catheter every six or seven hours. 3. Temporary or progressive; retaining the catheter or bougie from five minutes to one hour. Never employ force in introducing a bougie, and when you increase the size do not do it from day to day, but at the same sitting, i. e., commence with that which passed freely the day before.

When a bougie cannot be passed, but the urine flows off, use Dr. Leroy's apparatus for keeping the pressure of a bougie constantly against the part; or press the end of the instrument against the obstacle for a quarter or half an hour daily, and after each sitting, try to pass a small bougie; when these means fail, apply the caustic bougie.

When the stricture produces complete retention of urine, endeavour to pass bougies in conjunction with bleeding, baths, &c.; try the application of tobacco smoke; should these fail, press a small catheter against the obstacle for an hour. Cut down upon the urethra posterior to the obstacle, but should a calculus be there detained, cut through the rectum. If necessary to puncture the bladder, do it through the rectum. M. Lallemand cuts down on the strictured part itself. (Dr. Leroy d'Etiolles, p. 286.)

*Secondary form of Syphilis.*—Give the proto-iodide of mercury, and should it occasion irritation in the bowels with diarrhœa, combine it with opium. Let the diet be simple, avoiding all stimulants whether solid or fluid; the diet, however, should not be debilitating but nutritious. Cold and damp air is very injurious; fresh air is highly necessary. (Ricord, p. 280.)

*Tertiary Form of Syphilis.*—The characteristic of these symptoms, is their not being transmissible hereditarily. They are manifested chiefly in the subcutaneous or submucous cellular tissue, in the fibrous, osseous, cartilaginous, muscular or nervous tissues, and in organs in their locality. The remedy most to be depended upon is mercury. (Ricord, p. 280.)

PARTURITION, AND DISEASES OF WOMEN.—*Placental Presentation.*—Whenever the condition of the mother permits, *turn* the child, and extract the placenta. The placenta should never be detached first, unless the danger to the woman is so great from exhaustion, as to render turning hazardous; or, unless there exists some obstacle to the extraction of the child, either from distortion of the pelvis or from tumours.

Neither delivery by turning, nor detaching the placenta, ought ever to be attempted, until the cervix and os uteri will safely allow the introduction of the hand. Until this is the case, strict rest, the application of cold, and the use of the plug, will be required.

Detaching the placenta will be found the best line of practice, 1st, in severe cases of unavoidable hæmorrhage, with placenta previa, complicated with an os uteri so insufficiently dilated and undilatable, as not to allow of turning with safety; 2nd, in many of the cases in which placental presentation is connected with premature labour, and imperfect development of the os and cervix uteri; 3rd, when the uterus is too contracted to allow of turning; 4th, when the pelvis or passages of the mother are organically contracted; 5th, in cases of such extreme exhaustion of the mother, as forbid immediate turning or forced delivery; 6th, when the child is dead, and when it is premature and not viable. (Drs. Simpson, Radford, &c., &c., p. 316.)

*Galvanism.*—This powerful agent may be used to induce or increase uterine action in cases of hæmorrhage, before, during, and after labour; in cases of placenta previa where it is inexpedient to rupture the membranes and turn; in internal hæmorrhage, depending upon uterine inertia. Its effects are instantaneous, and much more to be depended upon than ergot, although it is advisable to try the secale first, and it will be found especially useful in those cases where exhaustion is so great as to render it dangerous to deliver the child in the ordinary way. (Mr. Dorrington.)

In cases of accidental hæmorrhage, in the latter months of gestation, where the os uteri is rigid and nearly closed, and the flow of blood cannot be arrested by ordinary means, and more especially if there be uterine inertia, galvanism will be useful. In applying galvanism, one conductor should be passed up the vagina to the os uteri, in which a moistened sponge is introduced, and the other to the abdominal parietes, over the fundus, in order to pass the current through the long diameter of the uterus, or they may both be applied externally in the short axis. The galvanic action should not be continued too long, and should be interrupted, so as to allow the uterus intervals of rest, and so to imitate nature's operations. (Dr. Radford, p. 334.) Galvanism may also be used as a dernier resort in *hæmorrhage* during the first months of pregnancy. (Mr. Wilson, p. 336.)

Electro-magnetism may be applied in cases of uterine inertia during labour. (Mr. Clarke, p. 337.)

*Uterine Hemorrhage.*—When danger to life is imminent, give opium freely; five grains for the first dose, and two or three every hour or half hour afterwards, until the pulse becomes distinct, the breathing easier, and the tossing about in bed allayed. At the same time, give warm wine and brandy, and apply heat to the extremities. (Dr. Griffin, p. 338.)

*Uterine Hemorrhage after delivery.*—In cases where, on previous occasions, there has been hæmorrhage after the birth of the child, prepare an infusion of secale, ʒj. to ʒiv. of boiling water, and when the child's head has just cleared the external orifice, give half of it (along with the powder); and when the child is entirely expelled, give the remainder. (Dr. Beatty, p. 338.)

Give ergotine in doses of two grains every two hours. It has been found serviceable in cases of uterine hæmorrhage, whether acute or chronic, and dependent on a dynamic or an organic cause. (Ebers, p. 339.)

When hæmorrhage becomes alarming after the expulsion of the placenta, turn the patient on her back, and grasp the uterus firmly with the hand, through the abdominal parietes, until it contracts; then take a small bowl or basin capable of holding twelve or fourteen ounces, having a thick smooth edge, and invert it over the body of the compressed uterus, taking care that the whole of it is compressed within the cavity of the basin, which is to be confined in situ with a bandage. (Mr Harvey, p. 339.)

Mr. Pretty has invented an apparatus by which he applies pressure to the abdomen to avert hæmorrhage after delivery; it consists of a central and two side pads, fastened by a strap, and tightened by means of a tourniquet; it is portable and easy of application. (Mr. Pretty, p. 340.)

*Transfusion.*—This should be adopted as a last resource when the patient is sinking. Mr. Brown reports a successful case in which he performed it, where there was the most alarming prostration, but no extraordinary discharge of blood. (p. 341.)

*Forceps, Application of, in Occipito-posterior Positions.*—In these cases, the forehead should be made to rotate backwards, and the occiput forwards; i. e., the extraction of the head with the forceps should be an exact imitation of the mechanism of the expulsion of the head by nature. (Dr. Simpson, p. 343.)

*Forceps, How to Apply.*—Having ascertained the exact position of the head, introduce the hand, well smeared with lard, within the os uteri; search for, and pass the fingers over the ear, so as to guide the blade over that organ, whatever may be its position. When the instrument is locked, do not tie the handles with tape, as it keeps up a degree of pressure on the child's head not consistent with its safety. In acting with the forceps, always bear in mind the different axes of the pelvis, viz., of its brim, cavity, and outlet: therefore, keep the handles of the instrument back to the perineum, till some part of the occipital bone has cleared the arch of the pubis, and when this occurs, gradually bring the handles towards the pubis, when the chin will pass over the perineum. The three powers of the forceps are brought into operation, viz., compression, traction, and leverage; but compression ought never to be made beyond diminishing the child's head to *three* inches, indeed, instruments are seldom constructed to admit of more. (Dr. Wilson, p. 349.)

*Uterus, Inversion of, from Short Funis.*—When this occurs, lose no time in separating the placenta from its attachments, and with the clenched hand replace the uterus; taking care not to withdraw the hand until the uterus contracts. (Mr. Smith, p. 359.)

*Prolapsus Uteri.*—Mr. Eagland, surgical-instrument maker, of Leeds, has constructed a very efficacious instrument for keeping the prolapsed womb in position. (For a description and wood-cut, see article, p. 360.)

*Speculum Uteri.*—Dr. Protheroe Smith's new speculum uteri consists of a glass cylinder fitted to an outer one of metal, within which it slides. The

inside of the metallic tube is highly polished, the reflecting powers of which are increased by the glass cylinder; the edge of the smaller or uterine extremity, is carefully rounded into a smooth ring, which projects slightly from the inner surface. In its side is cut an oval aperture, of about three inches in length, and two in breadth, extending to within half an inch of the end of the cylinder. Its other extremity consists of a rim, which projects about a line from the external surface of the tube, having its surface blackened for the absorption of any rays of light, which might otherwise be reflected, and impede the view by their dazzling effects. There is also a corresponding rim to the glass tube, by which it is more conveniently withdrawn from the metallic cylinder. (Dr. Smith, p. 352.)

Dr. Adam Warden has invented a new speculum uteri, particularly adapted for examining the posterior lip of the os uteri. (p. 353.)

Mr. Fergusson, of King's College, has also recommended a speculum uteri, in which the reflecting surface, which is very brilliant, cannot be tarnished with any discharges or lotions. It is a very cheap instrument. (356.)

Ricord's speculum uteri consists of two valves, united about the middle point, allowing both extremities to be widely opened; the narrowest part is thus placed at the vulva. To each valve a handle is attached, by which means space is gained, and the light falls upon the interior uninterruptedly, and pressure upon them causes a dilatation of the two extremities which can be maintained, diminished, or increased by means of a screw. (p. 451.)

*Menorrhagia.*—Give oxide of silver in half grain doses twice or thrice a-day. It will be of most use when the hæmorrhage is of a secretive character, occasioned by local excitement, and not from the rupture of blood-vessels. (Mr. Butler Lane, p. 103.)

Give nitrate of silver internally. Argent. nit., gr. iij.; aquæ distillat. ℥ij; solve. Give ten drops three times daily, and gradually increase the dose to fifteen drops. (Dr. Ditterich, p. 361.)

*Pruritus Vulvæ.*—Apply thrice a-day to the affected parts, by means of a piece of sponge, the following lotion:—Sodæ borat., ℥ss.; morphiæ sulphat., gr. vj.; aquæ rosæ distillat, ℥viij. M. ft. sol. (p. 361.)

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### AFFECTIONS OF JOINTS.

KNEE-JOINT.—*(Inflammation of Synovial Membrane.)*—Keep the joint perfectly at rest; for this purpose, when the disease is chronic, apply splints of thick leather, one on each side of the joint, keeping them in place with a bandage. Steep the leather well in hot water, so as to make it exactly fit the joint. When the cure is nearly completed, the patient should wear an elastic bandage, so as to allow of a little motion, within certain limits, and the heel of his shoe should be raised a little, to keep the knee slightly bent.

In the acute disease, use general antiphlogistic measures, as well as the local abstraction of blood. After giving a brisk purgative, then give twelve minims of vin. colchici in a saline draught three times a-day; in two or three days stop its exhibition, and after an interval of a day or two give it again; it is most useful when there is a gouty diathesis, with lithates in the urine; an occasional purgative is necessary during the administration of the colchicum, and also small doses of blue pill to keep up the secretion of bile which colchicum diminishes. Give mercury so as to affect the system; this may be done not only in the gouty diathesis, but also where there is rheumatic inflammation, and combine it with opium, as in iritis.

In chronic inflammation the same measures as in the acute, only not quite so active; leeches; blisters, apply them in succession, or keep one open with savine cerate; give colchicum as an alterative, two grains of the ex-

tract with as much blue pill, every night, and an aperient every third or fourth morning: or give the acetous extract, with calomel and comp. ext. of coloc., every second or third night. Give, also, iodide of potassium in small doses, combined with alkaline remedies. In slight cases, use liniments to the joint, lin. vol camph., and sp. terebinth.; or olei olivæ ℥jss.; acid sulph., ℥j., and sp. terebinth. ℥ss.; or paint the knee with a solution of iodine. When ulceration of the cartilages is going on; give mercury so as to affect the system, calomel and opium two or three times a-day; mere alterative doses will not do: in a few days the pain will be quite relieved. (Sir B. Brodie, p. 185.)

*Abscess.*—Make a free opening, and keep the joint in a state of absolute repose by means of leathern splints, or by supporting it with pillows and cushions. The articular cartilages will have become absorbed, and recovery by anchylosis is the result; the joint during recovery must be supported with leathern splints: or if the leg be bent on the thigh, use the screw instrument, with splints at the posterior part of the leg and thigh. (Sir B. Brodie, p. 188.)

*Gouty Inflammation of.*—Some of the smaller joints are affected first, and there is seldom much effusion within the joint. Give a grain of acet. ext. of colchicum, a grain of blue pill, and three grains of ext. of hop, every night, with a gentle aperient every third or fourth morning; after giving these pills for a fortnight, stop them for two months, and then give them a fortnight again, and so on: give also a grain and a half, or two grains of iodide of potassium, with ten or twelve grains of bicarbonate of potash twice a-day, for six or eight weeks at a time. This system must be continued, with occasional intermissions, for one or two years, or even longer. This chronic gouty affection is not in itself dangerous, but it shows a bad constitution, and the person thus affected is liable to other diseases. (Sir B. Brodie, p. 185.)

*Scrofulous Disease of.*—Never abstract blood, nor make use of counter-irritation. Here, as in all diseases of joints, a state of perfect repose is necessary; use the leathern splints. As soon as the digestive organs are brought into a proper state, give tonics, particularly chalybeate tonics. To children give the vinum ferri of the old Pharmacopœia, for three weeks, and then omit it for ten days, and so on for several years, so as to improve the weak constitution. If fever be produced, decrease the dose, or omit it altogether for a while; or give the tinct. ferri mur.; or the syrup of iodide of iron; or the latter and the vin. ferri alternately. When you have a patient with whom no form of iron will agree, then give quinine, bark, or alkaline solution of sarsaparilla; the latter is very useful to delicate children. Change of air is highly beneficial, the sea-side; when the joint has become stiff, do not use force to straighten it; it should be done gradually, by means of a screw apparatus; if an abscess forms in the joint, continue the use of the splints, but have them lined with oil-silk. If the disease have been neglected, or it has been found impossible to save the joint, amputate as soon as possible. If, by examination with a probe, it is found that there be a piece of dead bone within the joint, so that it cannot exfoliate, the sooner the limb is amputated the better. Bony anchylosis takes years for its completion, so that if the limb be bent there will be plenty of time to get it into its proper place. (Sir B. Brodie, p. 190.)

*Primary Ulceration of the Cartilages.*—Keep the joint perfectly at rest, and use setons, issues, blisters, and counter-irritants. The great remedy is mercury; two grains of calomel and one-third of a grain of opium, three times a-day, until the gums are affected. Where mercury cannot be borne, give sarsaparilla and iodide of potassium; sarsaparilla should also be given after the course of mercury. Ung. hydrarg. may be rubbed into the thighs where it cannot be borne internally. (Sir B. Brodie, p. 191.)

*Morbid Alteration of structure of the Synovial Membrane.*—Apply pressure by means of several alternate layers of diachylon plaster and bandage; and af-

terwards by leathern splints, and a firm bandage; attend also to the general health. (Sir B. Brodie, p. 192.)

*Loose Cartilages in the Knee.*—Remove them by operation; get the cartilage fixed over the outer or inner condyle, and while it is retained in that situation, divide slowly, the skin, cellular membrane, fascia, ligaments, and synovial membrane; hold the knife with a loose hand, or the cartilage will be pressed into the joint; lay hold of it with a tenaculum, but should it recede within the joint never grope for it, but bring the edges of the wound together, and perform the operation at some other time.—A valvular operation has been proposed. (Sir B. Brodie, p. 193.)

HIP-JOINT, *Inflammation of.*—Put the patient under mercurial influence. Before commencing treatment determine the probable duration of the disease, as the efficacy of the action of mercury depends much on the stage in which it is used. (Dr. O'Ferrall, p. 194.)

DISLOCATIONS.—Instead of using extension by the hands of assistants in reducing dislocations, make use of a little click wheel, fixed to the wall, and a rope attached to it; the extension is not only made more easily, but much more gradually. (Mr. Terrey, p. 202.)

*Compound dislocation of the Astragalus.*—When it is necessary to remove the astragalus, or saw off the end of the tibia, in order to return the bones to their place, never make a fresh incision to effect it, if there is already an extensive wound in another direction; rather amputate the limb at once, the chances of recovery will be so much greater. (Solly.) The late Mr. Colles, of Dublin, was opposed to amputation in compound dislocation of the ankle joint; and when advisable, he thought it best to wait until the symptomatic fever had subsided. (p. 200.)

*Immobility of the Lower Jaw.*—Keep up mechanical extension for a considerable period, gradually increasing it. An excellent instrument for this purpose has been constructed by Mr. Gay, of Leeds, under the direction of Mr. Teale. (See wood-cut. Mr. T. P. Teale, p. 197.)

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## AFFECTIONS OF THE SENSES.

EYE, *Inflammation of—Acute.*—Bleed and give nauseating medicines, purgatives, and low diet, and stimulate the liver, kidneys, and skin, to rid the fluids of pernicious ingredients. In the second stage, to prevent or arrest the consequences of inflammatory action, give mercury or iodine, bark, colchicum, turpentine, &c. In the third stage, when the inflammatory action has subsided, apply belladonna, and give mercury or iodine in smaller doses, and for longer periods, with local stimulation and cutaneous irritation.

When the disease has been treated with mercury, and returns, try depletion and antimonials, with confinement to bed, and low living, for two or three days before you again resort to that remedy. Give tartrate of antimony or James's powder, so as at first to cause nausea, and afterwards diaphoresis. Mercury is the sheet anchor, given so as just to affect the gums: at first, give three grains of blue pill, three grains of compound colocynth powder, and one-eighth or one-tenth of a grain of tartrate of antimony three times a day, for a couple of days; then five grains of blue pill, with the same quantity of antimony, for two days more; and finally five grains of blue pill three or four times a day. If it affect the bowels, add a little opium to it. This produces a mercurial effect upon the system in seven or eight days. Or two grains of calomel and a quarter of a grain of opium may be given every four or six hours, if we wish to affect the system sooner. The length of time we are to continue the mercury must be decided by its effects.

*Iodine*, turpentine, colchicum, and bark, are valuable where the inflam-

mation is modified by specific disease, or constitutional derangement, or where mercury has already been given, or cannot with safety be used.

From the very commencement of an attack of iritis, extract of belladonna should be used. Mix it with water until it acquires the consistence of cream, and paint the eyelid, brow, and upper part of the cheek with it; let it dry, and then apply it again, and cover it with a little damp linen, and keep it moist by applying a lotion made with two drachms of the extract to eight ounces of water. If its application be not found comfortable, it need not be applied more than once or twice in twenty-four hours. When its application to the skin does not affect the pupil, drop a little of the solution upon the conjunctiva, even during the inflammatory attack; its effects soon pass off. It is best to apply it in the morning. (Dr. Jacob, p. 308.)

In the external forms of ophthalmia, apply an ointment of oxide of silver, a drachm to the ounce. This is very analogous to Mr. Guthrie's black ointment. (Mr. B. Lane, p. 103.)

*Accidental Cataract.*—Two modes of treatment; 1st. To allow absorption to take place; the inflammation to be reduced by leeches and mercurials, as in internal ophthalmia; apply belladonna so as to dilate the pupil.

2nd. Remove the fluid mass of cataract by extraction of the lens through a small incision in the cornea (Barton and Gibson); make the puncture at the temporal margin of the cornea with the extraction-knife, or with Mr. Walker's instrument, which combines the properties both of scoop and knife, and carry the point of the instrument into the pupil, when the lens will be discharged with the aqueous humour. (Mr. Walker, p. 314.)

*Depression of the Crystalline Lens.*—The lens should be disengaged from its capsule in depressing it. To accomplish this, introduce the cataract bistoury through the coats of the eye, about a line and a half from the margin of the cornea; it penetrates the vitreous humour, and forms a breach in it, at the proper place for the reception of the lens when depressed: the point of the instrument directed towards the lens, is to be pushed across the eye to its opposite side, then penetrate the posterior part of the capsule, and, by drawing it outwards, incise it across its middle; then push the point of the needle between the lens and the iris, its flat side placed on the lower part of the lens, and press it backwards and upwards, then shift the point of the needle forwards upon the lens, and this presses it backwards into the breach of the vitreous humour, from whence it does not rise. (Dr. Watson, p. 314.)

*Wounds of Eyelid.*—If a large piece of skin be lost, and the edges cannot be united, subsequent ectropium is avoided by making an incision a quarter of an inch from the edge of the wound, which then allows the edges to be united. (p. 313.)

*Fistula Lachrymalis.*—Dilate the nasal duct by means of Morgan's sound and catheter; pass the sound along the floor of the nose, directing its point outwards, until it lies fairly below the inferior turbinated bone, then direct the point of the instrument upwards, and move it gently backwards and forwards along the inferior surface of the turbinated bone, until a little cartilaginous ridge is felt—this is the orifice of the duct; depress the handle of the instrument, and its point glides into the duct. No force must be used, as the bony structures are very delicate; repeat it daily until the resistance is overcome, and then keep the passage clean by injections of warm water. When well, the patient should be taught to pass the instrument, to clear away collections of mucus. This instrument supersedes the use of the style. (p. 312.)

SKIN DISEASES.—*Chronic Eczema of the Face.*—Give 3 or 4 drops of liq. arsenicalis three times a day, and cover the part day and night with lint spread with zinc ointment, or with ung. hyd. precip. alb.; or, give five grains of Plummer's pill every second night, and a saline draught twice a day, giving at the same time a course of Harrogate waters; regulate the

diet, avoiding all stimuli. Where the temperament of the patient is irritable, arsenic and cantharides aggravate the disease.

It often attacks the ears of young females in whom menstruation is irregularly performed; this function must be established by the usual means: apply bread-and-water poultices to the part during the night, and cover it with rags spread over with zinc ointment during the day; and give 10 grains of pil. aloes c. myrrh. every second night at bed time. After using these means for a week or two, give 5 minins of tinct. of cantharides, and 30 of liq. potass. twice a-day. (Mr. Erichsen, p. 297.)

*Eczema of the Scrotum, Penis, and Anus.*—Cover the parts with lint, wet with lead lotion, and enclose them with oil-silk, in order to keep off the air, and to prevent urine getting upon the part. Give a small dose of hydr. c. creta at night, and a dose of castor oil in a morning; in a few days substitute zinc ointment for the lotion, and give small doses of liq. potassæ, and five grains each of calomel and magnesia, twice a day. If it be of long standing, enjoin a strict diet, abstinence from fermented liquors, salted and heating articles of food, and give 20 minims of liq. arsenici et hydrarg. iodidi twice a day, with 5 grains of Plummer's pill at bed-time, and apply a mixture of zinc ointment and the ung. plumbi acetat. to the parts by means of a piece of lint cut to the proper shape. The treatment must be persisted in for a length of time. A little extract of belladonna rubbed down with the ointment, often succeeds in allaying the irritation. (Mr. Erichsen, p. 299.)

*Eczema of the Scalp.*—If occuring to a child, otherwise healthy, about the period of dentition, be careful how you check the eruption. Cut the hair, apply bread-and-water poultices, and subdue irritation by the application of rags dipped in olive oil, or smeared with zinc ointment; or sprinkle the part with the nurse's milk. Give small doses of hydrarg. c. creta and castor oil, and lance the gums, if necessary. Fluid magnesia is often useful. If it becomes inveterate, wean the child on beef-tea, broth, and a nutritious diet, and give mild tonics, a few drops of tincture of ammon-chloride of iron, or iodide of iron, twice a day (from half a grain to two grains of the latter); a great part of the treatment consists in keeping the scalp so covered as to prevent the access of air.

When it becomes chronic and inactive, and presents a furfuraceous appearance, have recourse to gentle stimulants; a lotion composed of from one to two drachms of sulphuret of potass, either alone or combined with an equal quantity of the carbonate of the same alkali, in a pint of plain, or of lime water; wash the head with this lotion three times a day: at the same time, every night after the last application of the lotion, apply an ointment composed of from a scruple to half a drachm of carbonate of potass to an ounce of lard, or one of creasote in the same proportion, or of white precipitate: or use the ung. hydr. nit. dil., or the sulphur ointment, or a mixture of this and tar or creasote ointment. Do not use the oiled-silk cap; it confines the perspiration and soddens the skin, producing a state of passive congestion which we wish to get rid of. (Mr. Erichsen, p. 301.)

*Chronic Eczema of the Hands.*—In the early stages apply water-dressing by means of oiled-silk gloves or finger stalls, and at a more advanced period, a solution of nitrate of silver (grain j. to the ounce), instead of the water dressing; or a solution of carbonate of soda (grain ij. to iv. to the ounce); or the following lotion: acid hydrocyan., ℥ss.; zinci oxidi, ℥j.; aquæ rosæ, ℥viij.; or cover the hand with the ung. hydrarg. precip. alb., either alone or mixed with citrine ointment.

If the disease only occupy a small patch, cover it with a slice of lemon. Its spreading may be checked by applying the solid nitrate of silver around the part. Constitutional treatment must also be adopted: remove any gastric, intestinal, or uterine disturbance, and give vegetable bitters, nitric acid diluted, or small doses of bichloride of mercury; the two latter may be given in infusion of bark. If the disease be of very long standing, give Fowler's or Donovan's solution. The hands should be kept at rest. (Mr. *Erichsen, p.* 304.)

*Chronic.*—Apply tar externally; give it also internally in capsules. (p. 305.)

*Pityriasis.*—External applications of a soothing nature; baths medicated with mucilage of linseed, milk, yolk of egg, &c.; at the same time give demulcents, diuretics, &c., to increase the renal secretion. Cover the parts over with glycyrrhine; it remains fluid, and resists evaporation under any temperature to which the body is exposed. It is abundant in the refuse of the soap-maker. (Mr. Startin, p. 306.)

*Itch.*—Immerse the hands of the patient in an alcoholic solution of staves-acre for half an hour together, two or three times, and the acarus scabiei will be destroyed. (Dr. Burgess.) Use a lotion made of an ounce of sulphate of copper to a pint of water: wash off the scabs before using it. It is an almost certain cure. (Mr. Lloyd.) Use a lotion of iodide of potassium in the day, and sulphur ointment at night; a cure may be expected in seven days. The lotion should be 3i. of iodide to ℥viij., or ℥xvj. of fluid. (Dr. Ward, p. 307.)

*Warts.*—Apply hydrochlorate of ammonia dissolved in water, or hydrochlorate of lime; persist in their application for some time. (p. 308.)

*Syphilitic Alopœcia.*—Cut the hair close, and use warm baths; and then apply the following liniment:—Equal parts of rectified spirit, Eau de Cologne, and castor oil; or equal parts of honey-water and tinct. of cantharides. Should little red spots or blisters be produced, cease the application for a short time.

*Lichen, Lepra, Psoriasis, Impetigo, &c.*—Frequent warm baths, taking care to soak the head well; and cover the spots night and morning with olive oil, ℥ss.; citrine omit. 3i.; M. Make a liniment. Or use the following ointment:—purified beef marrow, sixteen parts; sulphur ointment, sixteen parts; turpeth mineral, two to four parts; essence of lemons sufficient to scent it. (Ricord.)

*Mucous Tubercles.*—Use a dilute solution of chloride of sodium; dry the parts and sprinkle them over with calomel. Great cleanliness is necessary; do not use ointments.

*Eczema Impetiginoides.*—Cut the hair close, and apply water dressing, or lint dipped in an aqueous solution of opium; do not apply ointments. It should be a rule never to apply greasy substances to any eruption attended with oozing of fluid, since it mixes with the secretion, becomes rancid, forms a crust, the edges of which become excoriated, and what was an effect becomes a cause of irritation. Paint gummata and nodes with tinct. of iodine; it may also be applied to unhealthy tertiary ulcers.

Give internally, in secondary forms of syphilis, iodide of potassium or mercury: some prefer the former, as Dr. Williams, others the latter, as Sir B. Brodie. The following should be our guide in giving the iodide of mercury:—Secondary symptoms occurring after a course of mercury, will be benefitted by a course of iodide of potassium. Secondary symptoms occurring where mercury has not been used, will not yield to the iodide, but will to mercury. In order to prevent the iodide from causing pain at the pit of the stomach, or heat at the back of the throat soon after swallowing it, dissolve two drachms in three ounces of water, and let the patient take a teaspoonful of this solution night and morning in a large cup of tea, and the same quantity in half a pint of beer, or other fluid, at mid-day; the dose to be continued, and increased according to circumstances. It is of no use increasing the dose, or indeed of continuing this remedy beyond a week or ten days, if no amendment is visible. If mercury has not been given for the primary symptoms, begin with it immediately when secondary symptoms appear. Ricord gives the pure mineral, but the hydr. c. creta will answer best. If the organs of digestion be impaired, use friction; direct the size of a horse bean of ung. hydr. to be smeared on the inside of each calf of the leg every night; do not rub it in, as you irritate the hair bulbs by doing so, and you produce subsequent tenderness. Direct your patient to sleep in old drawers, so as to keep the bed clean. Do not use the ointment to the thighs,

as is usually recommended; it gets between the thigh and the scrotum, producing eczema; it also dirties the patient's linen, and excites the attention of the washerwoman. Get the patient firmly under its influence before you discontinue the use of mercury. (Acton, p. 274.)

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## TOXICOLOGY.

POISONS.—*Purified Animal Charcoal an antidote to all Vegetable and some Mineral Poisons.*—This substance may be used as an antidote to opium and its active principles, morphia, &c.; nux vomica and its active principles, strychnia and brucia; henbane, deadly nightshade, bitter sweet, thorn apple, tobacco, hemlock, bitter almonds, prussic acid, the aconites, &c., &c., in fact, to all vegetable poisons; to animal, also, as cantharides. The carbo animalis purificatus of the pharmacopœia should be used, and in the proportion of half an ounce to a grain of morphia, strychnia, &c. It combines with and renders inert vegetable and animal substances, and absorbs some mineral poisons, especially arsenic, and renders them harmless, and exerts no injurious effects on the body.

It should be rubbed in lukewarm water, so as to form a fluid of slight consistency, and thus given in quantities of from one to four ounces. Emetics also should be given: ipecacuanha, however will not do, as the charcoal renders it inert. Give sulphate of zinc in scruple or half drachm doses, or use the stomach pump, and then give more of the charcoal.

Might not this substance be tried to prevent the injurious effects of animal poisons, such as rabies, syphilis, poison of serpents, &c., applied in the form of poultice to the parts? (Dr. Garrod, p. 142.)

*Prussic Acid, Poisoning by.*—Dash cold water on the patient; apply ammonia to the nostrils, and heat to the spine and feet; give an injection containing tincture of assafœtida, use friction with a flesh-brush to the skin; and as soon as the jaws become relaxed, and the patient can swallow, give an emetic, and afterward some weak brandy and water, and strong coffee. (Dr. Gray, p. 145.)

Cause the patient to inhale the fumes of ammonia, when he has ceased to be able to swallow. (Mr. Hicks, p. 146.)

*Opium, Poisoning by.*—After the stomach has been well evacuated, should the vital energies sink, make use of electro-magnetism; pass the current through different parts of the body, and gradually increase its power until it reaches its maximum intensity. Continue its use for a considerable period, until sensibility is not only evident but complete. (Mr. Colahan, p. 153.)

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## MATERIA MEDICA AND GENERAL THERAPEUTICS.

AQUÆ COPAIBÆ VEL CUBEBÆ.—1. Ol. copaibæ, or cubebs, two ounces; water, five gallons and a half: draw over from three to four gallons. 2. Oil of copaibæ or, cubebs, two ounces; magnesia carb., six drachms: Rub together, and add four gallons or less of water; filter.

*Saccharised caustic solution of the oils of Copaiba or Cubebs.*—Oil of copaibæ, or cubebs, one drachm; caustic potash or soda, half an ounce; white sugar, six drachms. Twenty-four ounces of water to be added gradually.

*Saponiform solution* of these oils.—Oil of copaiba or cubebs, two ounces; caustic solution of potash or soda, one ounce. Rub together in a mortar, and add water as may be required.

These forms are not attended with the gastric and nephritic irritation usually met with while administering copaiba or cubebs. (Dr. Cattell, p. 294.)

*BROMINE, a substitute for Iodine.*—Where it is wished to substitute bromine

for the tincture of iodine, use bromine one part, distilled water forty parts, and give from five to six drops in some aqueous vehicle three or four times daily; for external use make the solution four times as strong as this.

*Bromide of Potassium.*—Dose from four to eight grains three times a-day; for an ointment, rub four parts with thirty-two parts of lard.

*Bromide of Barium.*—Dose from one to five grains three times a-day.

*Bromide of Calcium.*—Dose from three to ten grains in a pill with conserve of roses.

*Bromide of Iron.*—Dose from one to three grains in a pill with conserve of roses and gum arabic. (p. 172.)

DIGITALINE.—This substance may be given wherever digitalis is indicated; its advantage is, that it can always be exactly known what quantity of active principle is being employed. (p. 173.)

STRAMONIUM CIGARS are said to be a good remedy for asthma. (p. 174.)

AMPUTATION *at the middle of the Leg.*—The mortality attending the operation performed just below the knee is much greater than that lower down; it is also much more painful and not so easily performed; whilst in the latter case there is insured to the patient the use of the knee-joint. The two best methods of amputating the leg below the knee, are by the double circular and anterior and posterior flap operation. In doing either, take care to leave sufficient muscle to cover the bones; and in the latter operation, the anterior flap, composed entirely of skin, should be at least half a diameter in length, and the projecting ridge of the tibia should be pretty deeply sawn off in a slanting direction. The middle of the leg, or just below it, is the best point at which the bones can be sawn. (Dr. Lawrie, p. 202.)

*Venous Hæmorrhage during Amputation.*—Apply a bandage from the extremity of the limb nearly to the point at which it is to be amputated; it must be applied carefully and exactly, and with all bearable firmness. (Dr. Hannay, p. 205.)

*Circular Amputations.*—Let an assistant dissect back the skin on one side, whilst the operator does the same on the other; this shortens materially the most painful and unseemly part of the operation. (Dr. Hannay, p. 206.)

*Sutures after Amputation.*—If the parts will not meet without dragging or putting on the stretch, do not use sutures, and never pass them through the muscular structure. (Dr. Hannay, p. 206.)

*First Dressing After Amputation.*—Give thirty or forty minims of laudanum before the first dressing after amputation, particularly of a large extremity; it alleviates the shock which the nervous system is sure to receive; give it half an hour before the dressing. (Dr. Hannay, p. 206.)

ULCER.—To an irritable ulcer apply oxide of silver in the form of ointment or powder. (Mr. Butler Lane, p. 103.)

SORE NIPPLES.—Apply ung. argenti oxidi, 3i. to the ounce. (Mr. Butler Lane, p. 103.)

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# TESTIMONIALS.

*From* WILLARD PARKER, M.D., *Professor of Surgery, in the College of Physicians and Surgeons, City of New-York.*

754 Broadway.

Mr. Braithwaite's "Retrospect of Medicine and Surgery" is a work of the highest merit, and enjoys a most liberal patronage in Europe, and I am confident the American Edition of the same work will be most cordially received by the Medical Pro-Profession of our own country. No one will fail to possess it who loves his profession and desires to be up with the improvements of the day. For the trifling sum of $1,00 per annum, he can have all the advancements making in the Medical and Surgical world spread before him every six months. The American Publishers must be eminently successful in this enterprise.

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*From* VALENTINE MOTT, M.D., *Professor of the Principles, Practice and Operations of Surgery, with Surgical and Pathological Anatomy, Med. Department of N. Y. University.*

Braithwaite's "Retrospect of Practical Medicine and Surgery," appears to me, to be an excellent *résumé* of the most important and useful papers, and matters of fact, in the different branches of the medical profession. The remarks of the editor are sound and judicious. As it sums up briefly and semi-annually, it is peculiarly well fitted for the Profession of our country.

VALENTINE MOTT.

---

*From* GRANVILLE SHARPE PATTISON, M.D., *Professor of General, Descriptive, and Surgical Anatomy, New-York University.*

Messrs. Adee & Estabrook 654 Broadway, Oct. 31st, 1842.

I feel obliged to you for the copy of "Braithwaite's Retrospect," &c. which you have sent me, and rejoice to see a re-print of it in this country. Having received the English Edition, and being familiar with the work, I hesitate not to say that I know of no publication more valuable. Embodied in it, you have all that is new and valuable, most judiciously culled from the medical periodical press, not only of Great Britain, but of the world. I remain, yours respectfully,

GRANVILLE S. PATTISON.

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*From* JOHN B. BECK, M.D., *Professor of Materia Medica and Medical Jurisprudence, College of Physicians and Surgeons of N. Y.*

To Messrs. Adee & Estabrook, Publishers: Oct. 26, '42.

GENTLEMEN:—I am happy to find that the "Retrospect of Practical Medicine and Surgery," by Mr. Braithwaite, has attracted your attention. It is a work of no ordinary value, and calculated to be exceedingly useful. As such I hope most sincerely that your republication of it in this country will be extensively patronised.

JOHN B. BECK.

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*From* J. KEARNEY RODGERS, M.D., *Surgeon to the N. Y. Hospital.*

110 Bleecker-st. November 1st, 1842.

Messrs. Adee & Estabrook are re-publishing Braithwaite's "Retrospect of Practical Medicine and Surgery." I consider it a very excellent work, and one that cannot fail to benefit the reading part of the Profession.

J. KEARNEY RODGERS.

# TESTIMONIALS.

*From* CHANDLER R. GILMAN, M. D., *Professor College of Physicians and Surgeons, New-York.*

Mr Daniel Adee:— New-York, Dec. 14, 1844.

I have been a constant reader of the RETROSPECT from its first publication, and erteem it very highly. As a digest of the periodical literature of the day it is of the greatest value to medical men whose occupations do not permit them to devote much time to reading. No other work with which I am familiar will enable the practitioner to keep himself so well informed as to the progress of medical science. I commend it very earnestly to the patronage of the profession.

C. R. GILMAN, M. D.

---

*From* H. D. BULKLEY, M. D., *late Physician to the N. Y. Dispensary*

Mr. Daniel Adee:— New-York, Dec. 14, 1844.

I have been gratified with the very favourable manner with which your republi cation of Braithwaite's Retrospect of Practical Medicine and Surgery has been received by the profession in this country. For bringing this truly valuable work within the reach of so many who could not otherwise have availed themselves of it, and that, too, at a price so moderate, you well deserve our thanks—and you have my best wishes for continued success in your enterprise.

Yours, &c., H. D. BULKLEY, M. D.

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*From* ROBERT WATTS, JR., M. D., *Profcssor of Anatomy and Physiology in the College of Physicians and Surgeons of the University of the State of New-York.*

Dear Sir:— New-York, Dec. 13th, 1844.

Although it is rather late in the day for me to offer an opinion with regard to BRAITHWAITE'S RETROSPECT, yet as you think it may be of use, I am most happy to serve you I consider your Republication the most valuable medical periodical published in this country, containing as it does the cream of the foreign and American journals. I think it especially valuable to those of our profession who reside in the country, and who have it not in their power to take a number of journals, and to whom under our present post-office system, the expense of receiving journals by mail is often greater than the cost of the work itself.

I remain, &c., R. WATTS, Jr.

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Mr. Daniel Adee:— Boston, Dec. 5, 1844.

We have examined with considerable attention the work of Mr. Braithwaite, and think it affords an excellent view of the existing state of Medicine and Surgery. To those of the profession who have not free access to the foreign medica. journals it must be invaluable.

JOHN C. WARREN,
J. MASON WARREN,
W. CHANNING.

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*From* JACOB BIGELOW, M. D., *Professor of Materia Medica, and Theory and Practice of Medicine, Massachusetts Medical College.*

Mr. D. Adee:— Boston, Dec. 5, 1844.

I consider Braithwaite's Retrospect a useful exhibition in a compendious form of the improvements and other novelties which annually appear in medicine and its subsidiary branches.

JACOB BIGELOW.

## CRITICAL REMARKS, BY THE BRITISH MEDICAL PRESS, ON THIS WORK.

"We congratulate Mr. Braithwaite on the increasing success of his Retrospect, one of the most agreeable additions to medical literature which we have had the pleasure to encounter for some time. To the practitioner, we think that this work is indispensable. We do not address ourselves to those good easy drones, who, after having got a fair share of professional employment, drop into a kind of slumbery routine practice, and are content, amidst the improvements of each successive year, with treating diseases as they used to see them treated when they walked the hospitals, perhaps half a century ago; but we are considering the wants of those, who, with their own full share of employment and of personal experience, are glad to take a good practical hint from others, and to give to a new system or method of cure, that fair trial in their hands, which forms the only true test of its value. Such men have not time, and the majority of them have not the opportunity, to look through the pages of our already numerous Medical Journals, and thus, while the juniors of the profession, who have more time on their hands, become acquainted with the advances which practical Medicine and Surgery are making every where around them: the seniors, who could turn these facts and observations to better account, remain ignorant of them, from their want of time and opportunity.

It is to remedy this that Mr. Braithwaite engaged in the compilation of the series of volumes, the fifth of which is now before us. Its character is best described by a sentence from its own preface, which states, 'that almost every thing which has appeared in the Medical Journals for the last half year, and which is really useful to the busy practitioner, has been here condensed.'

Mr. Braithwaite has performed his editorial task in a highly creditable manner. The papers which he selects are all of them more or less distinguished for practical utility, and the short and judicious remarks which he appends to many of them, shew him to be a person of acumen and observation, as well as discernment.

At the commencement of the volume, there is a full table of contents, indicating the papers therein contained, which are arranged under the heads of Practical Medicine, Surgery, Midwifery, and Anatomy, Physiology, and Pathology. Though the first of these divisions contains chiefly contributions to Therapeutics, Mr. Braithwaite is not inattentive to Pharmacy, and has given one or two papers of a pharmaceutical character. We would suggest that in future, especially as he is to extend his survey to the continental periodicals, that the editor might have a separate department for some of the more practical articles in the department of Materia Medica and Pharmacy. This would in no way be inconsistent with the practical title of his Retrospect.

We again wish Mr. Braithwaite's Retrospect the continued success which it merits, and which the demand for a fourth edition of the first parts would shew that it has already met with."

*London and Edinburgh Monthly Journal of Medical Science, August*, 1841, *p.* 591.

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"Another number of this excellent work has just appeared; and really the more we see of it, the better we like it; and the more convinced are we of its practical utility to professional men That its merits have been duly appreciated by the profession must be highly satisfactory to Mr. Braithwaite, who is deservedly entitled to their thanks for this useful addition to our medical literature.

We perceive the editor announces his intention of including an analysis of French and German periodical literature, in future numbers; by so doing, he will open up rich mines of information, which are unfortunately not sufficiently explored by many in this country, and greatly enhance the value of his book."

*Medical Times, July* 10, 1841, *p.* 170.

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"This excellent work increases in utility and interest. The present volume concludes with a retrospective review of the progress of medical science during the past six months. Little worthy of notice has escaped the penetration of Mr. Braithwaite."

*Provincial Medical and Surgical Journal, July* 3, 1841, *p.* 278.

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"We have, on a previous occasion, expressed a high opinion of Mr. Braithwaite's work. It is one so eminently calculated to be useful, that we hope it will be widely patronised We shall ourselves notice several of its articles."

*Medico-Chirurgical Review, Oct.*, 1841, *p.* 569.

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"This useful and laborious compilation or concentration of practical medicine increases in value as it proceeds."

*Ibid, p* 591.

# MAUNDER'S

# TREASURY OF HISTORY.

The republication of this valuable work has been undertaken partly on account of the high favour with which it has been received in England, but chiefly in consideration of its intrinsic value, arising from the felicitous adaptation of the plan to a want that has been long and generally felt and from the judgment and fidelity manifested in its execution. The idea of giving in a single work, of no very formidable dimensions, and at a price which brings it within the reach of very moderate circumstances, a sufficient outline of the world's whole history, and similar outlines of the history of every nation, is so obviously judicious and appropriate as to require no eulogium. Every person who cares at all for the acquisition of useful knowledge must desire to possess such a general knowledge of past events, not only in his own country but in all countries, as shall enable him to understand the perpetually recurring allusions that are found in almost any course of general reading; because for want of such understanding there is always a serious diminution both of pleasure and profit, even in the perusal of such works as are designed chiefly for amusement. For instance, most of Sir Walter Scott's novels are founded upon history, and abound with references to historical events and personages, a want of some acquaintance with which detracts seriously from the interest and delight they are so well qualified to awaken; and so of most other works belonging to the better class of what is called light literature. But the difficulty has been to obtain this general knowledge without going through many books, requiring a greater expenditure of time and money than most persons are able or willing to afford; and to obviate such difficulty has been the purpose of Mr. Maunder.

His plan has the merit of completeness, and is undoubtedly the best that could have been desired. He gives first a general sketch of ancient and modern history—a rapid and comprehensive bird's-eye view, as it were, of the rise and progress of nations, the most important incidents of their career, and their relations to each other; and after this he takes up the nations separately, furnishing a concise digest of all that it is important or desirable to know concerning each, and thus affording a sort of key to the changes and events that were more briefly indicated, rather by their results than by their incidents, in the general sketch or outline. Thus the salient points of history are brought within a manageable compass; and an excellent foundation is laid for more thorough and extensive reading in reference to any portion of the world or any epoch of which a complete knowledge may be desired.

In the execution of this plan the author has been very successful. His notices of historical events, though brief, are lucid and satisfactory; and he traces the connection of effect and cause with singular acumen and generally with most commendable freedom from partiality or bias; thus supplying a very good idea of the philosophy of history as well as of the facts which history records. In a word, the work will be found invaluable to the general reader and a very useful help to the student.

It is now completed in 12 octavo numbers, printed on fine paper with clear type, and sold at 25 cents per No.

**DANIEL ADEE, Publisher,**
107 Fulton-Street, New-York.

The 1st Number was issued on the 1st of January, and the succeeding ones were issued on the 1st of each month until completed.

THE

# RETROSPECT

OF

# PRACTICAL MEDICINE AND SURGERY,

BEING

## A Half-Yearly Journal,

CONTAINING A RETROSPECTIVE VIEW OF EVERY DISCOVERY AND PRACTICAL IMPROVEMENT IN THE MEDICAL SCIENCES.

Edited by

**W. BRAITHWAITE,**

Surgeon to the Leeds General Eye and Ear Infirmary; and Lecturer on Midwifery, and the Diseases of Women and Children, in the Leeds School of Medicine.

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# PRACTICAL MEDICINE,

&c., &c,

## FEVERS.

ART. 1.—ON FEVERS.—By Dr. CORRIGAN, Dublin.

[Dr. Corrigan, in some excellent lectures on Fever in the Dublin Hospital Gazette, proceeds to the analysis of this disease in reference to its several functional lesions, and commences with those of the cerebro-spinal system, or that system which connects man with surrounding objects. We find first the absence of sleep, which is essentially not a mere symptom, but a part of the disease; for if the patient do not obtain sleep he must die: as in delirium tremens, in which death may occur solely for want of his natural rest, there being no organic disease to account for his death. If watchfulness continue for a few successive nights, delirium and subsequent coma are the invariable consequences, and these supervening, constitute a very serious aggravation of the disease.]

If (says Dr. C.), you hear that the patient has continued sleepless for several nights, it is quite clear that under such circumstances life cannot be prolonged. Then comes the question, what is to be done in order to relieve this function? In answering this question, I must again impress upon you the fact that you are not to look upon this want of sleep as a symptom, but as a part of the disease; and with this fact in view, we find the treatment to resolve itself under two heads:—First, general management, including the adaptation of external agencies; secondly, the employment of remedies. As regards the first of these heads more particularly, I may observe that nothing can be more marked than the difference (in its relation to the lesion of the function we are now considering), between the patient in a hospital and one in private practice. In the latter case, want of sleep usually sets in early, and is much oftener followed by delirium and coma than in the lower classes. There are errors in the management of the private patient which greatly increase the tendency to watchfulness in him, and in consequence of which, many, I have not a doubt, have fallen victims. What is the plan usually adopted with regard to attendants in such cases? It is most often this: two nurses are generally employed, and from that moment a continued noise or whispering is perpetually kept a-going; and of all the torments to which it is possible to subject a fever patient, I know of none that bears a comparison with a continued succession of whisperings. It is well known that a patient under such circumstances strains all his faculties to catch—no matter at what amount of torture to himself—the slightest whisper that may be made. To obviate in some measure this source of annoyance, I have sometimes ordered the patient's ears to be stuffed with cotton.

Remember, as I have so often said, that insomnia is not a symptom but a part of the disease; and that if sleep be not procured, delirium, and then coma, and most probably death, in the end, must ensue. If we now pass from the consideration of light, air, &c., to the question of medical treatment, the first thing to be done will be to have the head shaved; and this of itself is generally sufficient; the application of intense cold is often a serious error; it very often obviates the object you have in view—that of procuring sleep. After this, if you ascertain that the patient has still had no sleep, you will not be doing wrong, I am sure, if you apply four or six leeches to the temples. This is a remedy upon which, for my own part, I

place more reliance than almost any other. If, after your patient has passed three or four successive nights without sleep, you apply four leeches to the temples, and that you procure for him even half an hour's sleep, you will have done a vast deal towards his recovery. How the leeching has the effect of procuring sleep, it is not easy to explain—and I dislike theorizing on a subject connected with practical medicine; but it may be supposed that when the brain has been excited, through the absence of sleep, for three or four nights in succession, it is first in a state of irritation, and then passes into a stage of congestion; at all events there would appear to be some congestive action of the vessels, which if you relieve by the application of a few leeches, you do, as I have said, much towards the recovery of your patient. A state of general debility, requiring the exhibition of wine, need by no means prevent your employing this remedy; for while you give wine with a view to the tone of the heart, larger vessels and capillaries, you are perfectly justified in relieving the distended capillaries of the head by the local abstraction of a small quantity of blood; just as in some forms of ophthalmia, it is often the best practice to employ local bleeding to relieve the distended capillaries, and tonics to give them and the general circulation, tone. I was myself first led to adopt this practice in reference to procuring sleep, chiefly from having observed that, on the occurrence of epistaxis, sleep supervened, and the patient recovered, although in such cases the general debility had been so great as to have required a free exhibition of wine. You need have no fear of taking this small quantity of blood from the capillaries, for they very soon accommodate themselves to the trifling loss sustained: there is not the risk that might attend even so small an abstraction of blood, taken from a vein.

The application of cold to the head is another useful means of obtaining the same object, but it is one which is too often carried to excess. A bladder containing pounded ice is placed on the head, but air is quickly disengaged, the ice lies heavily upon the top or back part of the head, and sometimes causes even sloughing of the integuments. Instead of ice, take a single fold of linen dipped in cold lotion; lay it on the head, and it will generally answer all purposes. You will often observe the nurse take two or three folds of old linen or lint, which she moistens and lays over the head; the consequence of this mode of proceeding is, that the cloth, instead of remaining cool by evaporation, is almost always as hot as the part to which it is applied; in fact, evaporation cannot take place through the numerous folds of linen, and the head is kept absolutely hotter than if no lotion at all were used. All these matters may seem at first trifles, upon which I may appear to dwell unnecessarily; but, as I have told you, if we recollect that this want of sleep is not a symptom but a part of fever, too much attention can hardly be paid to minute details.

The question might suggest itself to you here, why, as opium is given in delirium tremens, and in such like diseases—why should it not also be administered here, where obtaining sleep is a matter of such paramount importance? Why not give it for the lesion of the cerebro-spinal function which we are now considering? Because, if opium be given in fever, and if it do not procure sleep, it does mischief of another kind. It will act injuriously upon the nutritive function, including that of secretion and excretion. In analyzing the disease before us, we may derive great assistance from comparing some of its lesions in function with symptoms in other diseases. For instance, in delirium tremens, while the tongue and gums secrete their natural quantity of mucus, and the secretion of urine is abundant, you may continue to give opium for the purpose of procuring sleep; but suppose, in the course of the treatment, the tongue became dry and brown in the centre, the urine high-colored and scanty, and a slight wound or cut, if there happen to be one on any part of the body, becomes dry and everts its edges—in other words, as the nutritive function is passing into a deranged state, then the opium is acting as a poison upon the system, and the continuance

of its administration would be fatal. The same considerations are to guide you in the exhibition of opium in fever: if the condition of the skin, of the mucous membrane, and an abundant secretion of urine, indicate a sufficiently active state of the nutritive and secreting function, you may venture on a trial of opium; but if the desired effect be not produced at once, do not attempt to press it; if you do, mischief will surely follow. Hyosciamus is a remedy which has not an injurious effect upon the functions of nutrition and secretion, but this cannot be said of opium. At the approach of coma, you must not, unless there be strong vascular action about the head, persist in bleeding, but have recourse to blistering, as a means of rousing the patient from his state of torpor. Here I may observe that in the ordinary way of applying a cap blister, as it is called, the blister cannot be made to lie close to the surface; for this reason, I have been in the habit of having the blister cut into strips of an inch in width, laid across the head in a direction from ear to ear, so that no part is left uncovered, and that the strips lie close to the skin. Counter-irritation may also be produced in a few hours by means of croton oil and ung. hydr. mixed. There is a state of the breathing preceding the approach of coma, which you might confound with that of bronchitis, but in which the danger is very different; it becomes exceedingly rapid and laboured, amounting to forty or fifty respirations in a minute, but the respiratory murmur is audible in the tubes; there is no mechanical obstruction in them; this is what is called cerebral respiration; while in that of bronchitis or catarrh the tubes are filled with mucus, and a mechanical obstruction is thus offered to respiration, from which very few cases recover. You observe, besides, the characteristic lividity of the countenance, while in the cerebral breathing the countenance is pale, natural, or high-coloured. The cerebral breathing is a breathing of debility, very similar to that you hear in a person after very violent exercise. In the case of Prunty, for instance, which you remember was a very severe one, I observed that the breathing was very rapid and laborious, but still the face was very pale. Here the debility was very great, requiring enormous quantities of wine, so much as thirty ounces of which were given in the day; the convalescence in this case will be very slow. There is one point upon which I cannot speak too strongly; I allude to the condition of the bladder. You should look with the strictest attention to the state of this organ. The nurse may tell you the patient passes water freely—in fact, that it flows from him in the bed; but you are aware, from what occurs in the surgical wards in injuries of the head, that this is not to be trusted to; at all events, make it a rule to examine closely, and there is no harm in the introduction of a catheter. In the female, the bladder will distend to a volume capable of containing at least three quarts, while all the time the urine is dribbling away in the sheets. In speaking of leeching and other remedies, you observe that I have said nothing of what is to be done on this day or that of fever. Get the idea of days out of your head; fever is not like a case of peritonitis or pneumonia, in which the stage of congestion and the stage of deposition of lymph, &c., are to be gone through in order. In the analysis we have made of fever, as purely a disease of functions and these lesions of functions not symptoms but portions of the disease itself, the treatment is to be adapted not to the circumstance of the fifth, sixth, tenth, or twentieth day of fever, but to meet the state of each particular function, day by day. Take up, in their proper order, as you stand by the bed-side—first, the circulating function, made up of the heart, larger vessels, and capillaries; examine the state of these functions; next look to that of nutrition and secretion, as declared by the state of the tongue, gums, urine, and the other symptoms, as I have gone through them; then to the cerebro-spinal system, which we have examined to-day.

If you understand clearly the rules I have endeavoured to lay down, you will understand why it is that we may with advantage combine the application of leeches with the administration of wine, and, along with the latter,

the exhibition of mercury; the one to meet the lesion of the circulating function—the other for the purpose of relieving the derangement of nutritive functions. You also know that mercury may be combined with aqua acetatis ammoniæ, &c., when febrile excitement is to be subdued; and you can perceive the value of blisters and other stimulants as a means of stimulating the function of circulation, or of rousing a patient from the lethargic condition into which he may fall. Thus, if you follow up the rules which in the analysis of fever I have endeavoured to carry out in the short space of three lectures on the subject, you will be able to understand why it is that remedies of an opposite therapeutic tendency may be usefully combined. You can understand also that fever is not a disease to be treated by guess-work, but that it has, in fact, on accurate investigation, rules for its treatment as definite as those of any other disease you may have to contend with. I have explained to you why it is we have a crisis in some fevers and none at all in others. I have shown you that in some cases accompanied with very marked derangement of the nutritive function, a crisis by the urine is observed and is manifested by a deposition of urate of ammonia, and of that highly-animalized substance, urea, in double or treble the quantity contained in healthy urine. In other cases where the lesion we have been this day discussing plays a principal part, crisis by sleep occurs; for instance, you find a person sleep occasionally for six-and-thirty hours, who had for several days perhaps not closed his eyes; he awakes after a lengthened repose of this kind, drinks freely, and his strength rapidly returns, upon the restoration to health of the important function of the cerebro spinal system. In some cases, again, no crisis at all is observed, and that most often occurs in fever of the type prevailing at present, where the lesion of the circulating function is the chief derangement. You can distinguish nothing like a marked crisis in these cases; the urine may show some slight evidences of it, but they are very trifling. But the crisis most of all to be dreaded in the fever now prevailing is a crisis by perspiration; for you may almost lay it down as an axiom, that when perspiration sets in on the sixteenth or seventeenth day, there is a very great risk of your patient's life. It is very hard to say why it is so, but you must by all means avoid anything that would encourage perspiration. In common inflammatory fever, its occurrence upon the second or third day may be looked for as an advantageous occurrence; but in our present maculated fever it is much to be dreaded, as a circumstance productive of extreme exhaustion and relaxation. I could, of course, spend a length of time upon the mere varieties of fever, but enough, I think, has been said in these three lectures to afford you principles upon which you may obtain perhaps a better foundation, as regards the treatment of fever, than you could derive from some of the books that come before you. At the same time, I throw out these views without any desire that you or others should dogmatically follow up the principles I have endeavoured to set forth, but that if in a comparison with the rules of others, you find mine more plain in their application, it will be sufficient for me to have placed the rules in a clearer point of view.—*Medical Times.—Dublin Hospital Gazette, May* 1, 1846, *p.* 273.

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2.—AN ACCOUNT OF A TYPHOID FEVER, APPARENTLY ORIGINATING IN LOCAL MIASMA.—By Dr. CHRISTISON, Professor of Materia Medica, Edinburgh.

[The results of the recent Government investigations into the causes of the unhealthiness of towns, have proved beyond a doubt, the tendency which putrid effluvia has to favour the spread and aggravate the malignity of Typhus Fever. They have done more than this—they have gone far to prove that the effluvia arising from organic matters in a state of decay, are capable of generating a fever in its worst form; this shews that continued

fever may be epidemic or endemic in localities very circumscribed. This fact is clearly proved from the impossibility of tracing its origin to infection—the narrowness of its range and its peculiar virulence—all calculated to distinguish it from the usual epidemic form of continued fever. Dr. Christison has recently had his attention particularly drawn to this subject in consequence of having been called to several cases in Peebleshire, attended with some peculiar circumstances. He gives the following account of them.]

In a thinly-populated rural district of Peebleshire—the locality will be particularly described hereafter—Mrs. W., the wife of an extensive farmer there, was attacked on the 22d of January last with rigors, general prostration of strength, and great disinclination for food; to which occasional vomiting was added five or six days afterwards. She was visited for the first time professionally on Friday, the 30th January, by Mr. Macnab; who found her in the following state, as I shall give it in his own words. "She complained of rigors, pains in the back and limbs, headache, a little intolerance of light, slight sore throat and dryness of the mouth, a painful sense of palpitation along the course of the descending aorta, nausea and desire to vomit, with occasional fits of vomiting, thirst, want of sleep, total loss of appetite, and great exhaustion. The pulse was 92 and feeble, the tongue covered with a very thick brownish-yellow fur, the back of the throat somewhat red, the vomited matter partly mucous, partly bilious, the bowels constipated, the evacuations dark and offensive, and the urine unusually yellow, as if bilious. The countenance had an anxious expression, and the eyes were suffused; but there was no appearance of petechial eruption either at this time or subsequently. The temperature of the body, and of the extremities more especially, was lower than natural. There was no pain in the epigastrium or in either hypochondriac region.—Under the use of frequent laxatives and diaphoretics she gradually recovered.

"On the 9th of February she was able to take food with relish, and for some days had been without any tendency to vomiting, so that she was left as convalescent, but with instructions that assistance should immediately be procured if any unfavourable change presented itself." Having heard nothing farther of the case for four days, Mr. Macnab went on the 13th to inquire for her; and, to his surprise, found her labouring under all the former symptoms in an aggravated degree. "The thirst was intense, the nausea and vomiting very troublesome, the pulse 100, small, feeble, and intermitting, the tongue covered with a very thick, dry, yellowish-brown coating, the bowels very constipated, the evacuations dark, bilious, and fetid, and the vessels of the conjunctiva much injected. But there was still no pain in the abdomen, and no appearance of petechiæ anywhere; neither was there any wandering of the mind. The remedies which were formerly of service had now no effect; the more urgent symptoms went on steadily increasing; on the 16th towards evening articulation became indistinct, and her words for the first time incoherent; and at six o'clock on the same evening she expired. An inspection of the body was not allowed. It presented after death an emaciated appearance, and a peculiar yellowish colour, but no tumefaction." Mrs. W. was seventy years of age, but had long enjoyed excellent health.

The next case was that of her husband, Mr. W., also a hale old person of seventy. He was taken ill on the 25th January, within three days after his wife. His illness commenced in the same way. On the 30th Mr. Macnab found him labouring under symptoms precisely similar to those described above, and nearly the same in degree, except that he had not so much prostration of strength, being able to sit up at the fireside. The pulse was 92, and of moderate strength. Like his wife, also, he improved under the administration of laxatives and diaphoretics down to the 9th February, when the vomiting had ceased, the appetite was tolerable, and he felt himself able to leave his bed. After this, however, the same symptoms recurred; on

the 13th Mr. Macnab found him greatly worse; remedies were no longer of any avail; and he died on the 18th, two days after Mrs. W.; his mental faculties continuing as in her case, unimpaired till a few hours before dissolution. The body, after death, had a yellowish, sallow appearance, and speedily began to decay.

The third case in point of order was that of Mr. G. W., the son of Mr. and Mrs. W., who was taken ill on the same day with his father. But it may be as well to notice in the first instance the fourth case, because it was the only other that proved fatal. This was the case of a servant girl in the family.

The disease under which Mr. and Mrs. W. died presented the characters of ordinary typhoid fever, but with certain peculiarities; and it proved fatal, like many cases of ordinary fever, about the close of the third week. The servant, Isabella M., aged twenty, was seized on the 26th January with rigors, vomiting, loss of appetite, and prostration of strength, exactly as her master and mistress before her. On the 30th Mr. Macnab found her affected, like them, with "pains in the extremities, slight sore throat, nausea, and frequent vomiting, palpitation of the heart, and a troublesome pulsation in the descending aorta, urgent thirst, total loss of appetite, complete want of sleep, and great debility. The pulse was 112, and small, the tongue covered with a very thick yellowish-brown fur, the temperature below the natural standard, with occasional rigors, the bowels constipated, and the evacuations dark and offensive." The symptoms therefore were precisely the same as in the previous cases. But their progress was very different. For no abatement was accomplished by treatment; her strength was quickly exhausted; and she died in the afternoon of the 1st February, within six days and a half after being first taken ill. In her instance death was preceded for twenty-four hours by some delirium and considerable stupor; but in no other case were these symptoms so well marked as to attract notice. The body after death presented the same yellowish sallow hue of the integuments, as in the cases of Mr. and Mrs. W.

These were all the fatal cases. In addition twelve other individuals were more or less severely attacked with similar symptoms to those detailed above; and three or four other persons were more slightly affected, whom, however, Mr. Macnab did not attend professionally, and concerning whom consequently he derived his information at second hand, and in a way not quite satisfactory to his mind. It is unnecessary to describe all these cases, as they presented a singular uniformity of characters. Two only may be added, the one as an example of the disease in its severe form when not fatal, the other to exemplify the mildest form.

Mr. G. W., son of Mr. and Mrs. W., aged about 27, "after being absent from home for about three weeks, returned with his sister from the Island of Skye on the 19th January, three days before his mother took ill. On the 25th, six days after his return, he was seized with nausea, tendency to vomit, thirst, disinclination for food, considerable prostration of strength, and slight headache; he continued in this state, sometimes confined to bed, sometimes going about a little, until the 28th, when urgent business compelled him to proceed to Edinburgh, a distance of twenty-two miles. He went thither on horseback, feeling sick and uncomfortable on the way, and vomiting a little; but he was able to remain in town till the 30th, and afterwards to ride back to the farm, where Mr. Macnab saw him next day. He then felt better, but still complained of sickness, tendency to vomit, slight headache; some sore throat, and a little appetite for food. The pulse was 86, and of moderate strength; and the tongue was covered on every part but the mere edge with a very thick, yellowish-brown fur. Subsequently he became worse. The vomiting gradually increased in frequency, and the vomited matter acquired a bilious appearance. The bowels were obstinately costive, and the evacuations dark and bilious. The urine seemed as if loaded with bile. The lining membrane of the throat was slightly red, and the vessels of the

conjunctivæ were full of blood; but there was no appearance of petechial eruption on the skin.

He continued much in the same condition till the 9th February, when he became considerably better, so that he could even take a little food with relish. But on the 13th he was much worse again. The vomiting had become urgent, the thirst extreme, and the desire for food altogether gone. The pulse was about 90, rather feeble; and the tongue loaded with a yellowish fur as before. He now also complained of severe pains in the limbs, especially below the knee joints, down the front of the tibæ, and also to a less degree in the arms and hands. He described this sensation as a painful uneasy numbness, causing incessant restlessness and change of posture; it was attended with coldness of the integuments to the sense of another person; and he derived no relief from the warm bath or hot fomentations. No change for the better having occurred in five days more, he was removed on the 18th to Edinburgh. He bore the journey well, and under the care of Dr. Begbie, began speedily to improve." On the 20th, I saw him in consultation with Dr. Begbie and Mr. Macnab, who came to town on purpose. The vomiting had ceased; but the pulse continued about 90 and rather weak, the tongue much loaded, though less so, the bowels difficult to move, and the desire for food still altogether wanting. The pains in the limbs were also distressing, and occasioned much restlessness and want of sleep. There was a good deal of languor; but he conversed without difficulty. The countenance and skin generally were pale, the eyes clear and not injected, the expression not oppressed; and altogether the general physiognomy of the disease struck me at once as different from that which has long been familiar to me as characterising the several forms of the infectious typhus of this city. Under the use of laxatives, calomel, diaphoretics, morphia at night, and tonics, the patient gradually threw off the more urgent symptoms, and was restored to a state of good general health. But the painful uneasiness of the limbs continued without material abatement. Even so lately as the 4th of May, more than three months after he was taken ill, Mr. Macnab wrote to me, that "the legs are somewhat swelled from the knees downwards; he complains of a sense of uneasy soreness in them, together with a numbness and want of the feeling of pain when the skin is pinched; he walks with very great difficulty; and altogether the affection seems to be of the nature of partial and incomplete palsy." [He continued in the same state on the 8th of June.]

A short example of the slightest form of the disease will now conclude the narrative of cases. "Marion H., daughter of one of Mr. W.'s ploughmen, residing within two hundred yards of the farm-house, had been frequently in the house milking the cows and taking occasional charge of the two domestic servants while sick. On the 1st February she was seized with nausea and desire to vomit, thirst, and the other early symptoms mentioned above. The pulse was 96, the tongue furred, the bowels constipated; but the thirst was not urgent, and the sore throat inconsiderable. Under the use of laxatives and diaphoretics she gradually recovered, and in ten days she was able to be out of doors. On the 4th of May, she was in excellent health, and engaged in her usual occupations as a farm servant." Neither this patient, nor any other but Mr. G. W., and another girl, a house servant, suffered from pains of the extremities or incomplete paralysis.

The foregoing cases will serve to illustrate the characters of this little epidemic, so far as the symptoms are concerned.

[In the whole of the cases which occurred, fifteen in number, the symptoms, both in nature and succession were nearly similar; such as severe gastro intestinal derangement, nausea, vomiting, loathing of food, furred tongue, and obstinate constipation; no petechial eruption occurred; the accompanying fever was slight and adynamic. The disease was most severe in those who resided night and day in the farm-house. Although every person who came into the farm-house was affected more or less, it is wor-

thy of particular remark that it was not communicated to any one else, by those who were attacked by it. If it spread simply by infection, this infection must have been remarkably virulent, since every person exposed to it was attacked. Dr. Christison arrived at the conclusion that the disease must have arisen from local malaria. The farm-yard was situated on rising ground behind the house, and he concluded that the drains were defective—and that the soil around, and perhaps even under the house, had become impregnated with decaying animal matter. On examination it was found that all the drains were closed up with the accumulated filth from the necessaries and farm-yard. The effluvium was so great when these were opened, as to affect the air to a considerable distance in the neighbourhood. It is probable that attacks of fever from similar causes, are very common; since farm-yards are generally too near the dwelling-houses, and the inhabitants allow filth to accumulate from bad drainage. Not long ago, a farmer's family in Stirlingshire, four in number, all died of malignant fever, in a very short time. It is probable there was a similar cause in operation here.

It is a common opinion, that moisture, or wet weather, often aggravates the influence of miasma: but in contradiction to this we would adduce the fact that for many years, to our own knowledge, Typhus has existed after a long season of dry, warm weather, as in the late autumn. This we have noticed much oftener than after or during the prevalence of wet weather. We suspect that it is too often forgotten, that malarious particles may be dissolved by moisture or water, so as to be rendered innocuous.]

*Monthly Journal of Medical Science, July*, 1846, *p.* 1.

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3.—ON TYPHUS FEVER.—By Thomas Laycock, M. D., Physician to the York Dispensary and Lecturer on the Theory and Practice of Medicine.

[Dr. Laycock observes that the critical days of fever generally have a tertian type, the paroxysms being probably on the 1st, 3d, 5th, 7th, 9th, 11th, and 13th, the fever then ending, i. e., after the seventh paroxysm, and the amendment being on the fourteenth day. He remarks that,]

Some practitioners say that the doctrine of critical days is a fancy: a friend told me so not long ago. I answered, "Then, my friend, you are wiser than Hippocrates and all the big-wigs who have believed with him for the last 2000 years." His answer was, that he had never read Hippocrates and the big-wigs. So I begged of him to tell me what a critical day was. I knew that, as he had never studied the subject (for the Treatise de Diebus Judicatoris, in the Hippocratic writings, is the best ever written on it), he could not; and he knew it, too, for I had to press him to give a definition. At last, he replied, "that a critical day is the day when a person is in a critical state, when he will have some marked change, as a sweat, or a purging, or when he is in great danger, and you do not know which way the case will turn." He was rather surprised when I said that, on the contrary, a critical day is the day on which you *ought* to know how the case will terminate; it is the day on which you may form a judgment as to the probable course of the disease. I know the word critical has been popularized, and means dangerous, as used by some people—newspaper writers in particular. But the origin and original use of the word should be noted; it will do you no harm to look in upon Hippocrates, and consult him upon this point. If you do this you will find that crisis is a Greek word corresponding to the Latin judicatio, and the English judging: it has no reference to danger at all. It means, medically, the act of mind by which you make certain deductions from certain morbid phenomena happening at a certain time; a process by which you infer, 1, the probable duration and termination of disease, and 2, the symptoms likely to appear on certain future days. Now, if you have a case of fever in

which jaundice and hiccup appeared on the fifth day, it would be fatal, probably, on the seventh day.

In a paper published in the 12th vol. of the London Medical Gazette, Dr. Latham objects to the doctrine of critical days. He says, the evidence in its favor is imperfect, and he gives a table of the duration and termination of 297 cases of fever. Of these, 108 are reported as being prolonged beyond the 28th day, and 33 of the 108 beyond the 42d day. I am inclined to think that no specific or epidemic fever can be prolonged beyond the 28th day; there may be such an one, but I never saw an example. You may have irritative or hectic fever continue after the termination of the true series of febrile phenomena, but this ought, I think, to be considered apart. It is a fever consequent upon the structural changes which specific fever induces—the sequelæ, as they are termed. I think, then, we should strike off these 108 cases; and I think, too, we must either doubt Dr. Latham's exactitude of observation (although this be a heresy) in some of the other cases, or conclude that there has been something very peculiar in the type of the fever. At all events, if Dr. Latham be right in his observations, and the fever has been of the kind termed a twenty-one day fever, other observers must have been quite wrong. Dr. Tischendorf, of Langenfeldt, in Vogtlande, took notes of the critical days in 100 cases of nervous fever. I extract his numerical statement from Schmidt's Jahrbucher, vol. 21. Of the 100 cases, 19 died; of the remaining 81 the termination was as follows: on the 11th day, 8; 14th day, 36; 21st day, 34; 28th day, 5. But he reports none as prolonged beyond the 28th day. I am inclined to think, from a personal acquaintance with German pathologists, that this nervous fever is identical with the fever of which we have witnessed some examples lately. I could multiply numerous proofs of this kind from almost every quarter, and I think positive proofs are always to be received as of greater weight than negative proofs. You will therefore do well to look out for critical days, and I can assure you, from my own knowledge, that a determination of them will be very useful to you. I will give you an example. I was requested by a neighbor of mine (who, although a surgeon and apothecary, practises rather as an amateur than as one of us), to visit a humble friend of his under his care. The case was one of malignant scarlatina; the patient was the father of a numerous family, and my friend was very anxious about him. On the 13th day of his attack (for we ascertained the exact order of the febrile phenomena), he was very bad indeed; he could not swallow, nor speak, nor hear, nor, in fact, take notice of us. He seemed to be on the point of death, and properly he ought to have died next morning (the 14th day), about three or four o'clock. "Well," I said, "It is all over with our patient, but there is one slight chance left. If we get him over to-night, we shall get over the last paroxysm; to-morrow may, perhaps, see him rally." So my friend sat up with him all night. He administered stimulant enemata, applied terebinthinate epithems, kept the feet warm, moistened the tongue and throat from time to time with stimulants; in short, helped on the flagging powers of nature; and nature triumphed, the man got well, and is alive yet. This case has a double value: it illustrates the doctrine of critical days, and it shows the necessity, when you go forth to combat the enemy, of having this motto written on your weapons, "nil desperandum."

You will wish to know how the critical days are to be observed. The mode will depend upon the kind of fever. In the exanthematous fevers they are very clearly manifest; if you will read Dr. Cragie's history and description of small-pox you will find that the critical days in that fever are the fourth, seventh, eleventh, and fourteenth. In counting the days you count the days of the first rigor, or febrile paroxysm, as the first day. Fevers, like agues, have varying types. You are aware that a quotidian in spring or the beginning of summer may be a tertian at the beginning of autumn, and a quartan during the winter. In agues the remission of the

febrile phenomena is complete; it is an intermission. In a remittent fever the remission is less complete; the symptoms do not disappear quite, but are alleviated only. In a continued fever like typhus, the remissions are still slighter, and the alleviation of the febrile symptoms still less.

Now, in proportion as the remissions are less distinct, careful observation becomes the more necessary, if you would distinguish the critical days. Supposing our typhus fever have a tertian type (which it has at present, but in the autumn it may be a quartan) your patient will be worse on the third, fifth, seventh, ninth, eleventh, thirteenth, seventeenth, twenty-first days, and he may also be better on these days, for the period of the the day on which the exacerbation takes place is not the same in all cases, nor on each day in the same person. If the exacerbation be in the morning or at noon, there will be a slight remission toward night. If it have the quartan type the exacerbation on the critical day will probably be between 4 and 12 o'clock, P. M., and then after 12 o'clock there will be an improved state of things. In a fever of this type it has been noticed that the critical days are the first (second, third), fourth (fifth, sixth), seventh (eighth, ninth, tenth), and eleventh. The last series has, you will see, an interval of three clear days. Now I do not know exactly why this happens; it is so, however, and I think it may be explained by the tendency which fevers have to change gradually the hour of periodic exacerbation. Sometimes the hour of accession is an hour or two later at each successive recurrence, sometimes an hour earlier, but usually the former. Now in the case of typhus and other continued fevers, anything like a critical evacuation is not necessary to the cure. The remission may be characterised simply by less heat of skin, less thirst, less delirium, an hour or two of quiet sleep, a free discharge of urine, or a slight diaphoresis. Or it may be that you just simply find your patient has a feeling of being better.

The treatment of these affections is very simple. The diarrhœa should not be stopped too soon. Let the bowels be well cleansed out by the purgation: you cannot say what injurious thing is carried out of the system by it. A little magnesia or lime-water, or, after repeated dejections, the cretaceous remedies, with opium, may be given. Should you find the diarrhœa become urgent you must stop it by calomel and opium. A grain of each may be given at once, and half or quarter-grain doses at intervals varying according to circumstances. If there be much tenesmus or dysenteric symptoms, an opiate enema will allay the incident excitor irritation of the rectum. In worse cases you may make the enema of acetate of lead, gr. iij. or iv., and acetate of morphia, gr. j. or ij., with an ounce and a half of distilled water. This with any simple diluent will usually be successful.

With regard to the typhus fever which is sometimes set up after the diarrhœa, the best treatment is that called expectant. You must take care that the patient have plenty of fresh air, for he is hot; that he have plenty of some cool simple diluent to drink, for he is thirsty. Let him have a frequent change of bed-linen, and let him be frequently sponged or dowsed all over with cold water, if that be practicable. Nature says eloquently, "cool my burning hot skin; quench my great thirst." Indeed, you may take it as a useful general rule that what is agreeable to the patient is useful; and when inquiries are made about his diet you may very safely allow him to take what he likes. He will not take much of anything. But caution the attendants not to give him what *they* like, because there is a wide difference between the ideas of the two parties. The sick man is guided by his instincts; the attendants often by some absurd theory. But it is well to make their theoretical notions useful in making them attentive to your directions. The nurse will generally sponge oftener if you give her a hint that she will thereby cool the fever and open the pores (the theory of closed pores is quite popular); and when diaphoresis takes place she will review her labors with much self-gratulation as the prime cause of the "opening of the pores," and you will come in for a large share of the credit too. The com-

mon febrifuge, the liquor of acetate of ammonia in camphor mixture as a vehicle, is as good a medicine as you can give.

When the head symptoms are urgent the cold douche is the best remedy. Give plain directions as to its use. Let the patient be wrapped up to the neck in a blanket, and direct that three or four pitcherfuls of water be poured upon the head from the height of a few feet, and to be repeated three or four times a day. Counter-irritants, in extreme cases may be applied to the nucha or behind the ears. The irritation of the bowels ought not always to be effectually checked, because I am inclined to think that it acts as a counter-irritant: but when it is manifestly debilitating the patient you must put a check upon nature's movements: she may carry her irritation too far. Sometimes the common cretaceous mixture is sufficient for this purpose; in other cases where there is an apthous condition of the mouth and fauces, you will find the nitrate of silver a very useful remedy. An eight-ounce mixture, with two grains of the salt dissolved in distilled water, to which a few minims of dilute nitric acid have been added, is a good preparation: an ounce to be given to an adult every three or four hours.

After the fever has abated the diarrhœa sometimes continues, and the patient gets no strength. Now, in such cases, small doses of sulphate of quinine, with the sixth of a grain of sulphate of copper, dissolved in any suitable vehicle, to which a few minims of dilute sulphuric acid has been added, plain water—aqua fontis is the best—may be given with advantage. If the stomach will bear the remedy it will act well. Acetate of lead, combined with opium or acetate of morphia, in pills made up with breadcrumb, is also a useful sedative in these cases of chronic diarrhœa; these remedies may also be used in the form of an enema as I before mentioned.

[The most frequent exciting cause of fever, diarrhœa, and cholera, is error in diet; it directly precedes an attack, although it is not the true pathological cause. Dr. Laycock considers fruit an excellent summer diet, when taken moderately; he says it is a prophylactic against diarrhœa. He observes,]

Now there is a much more efficient and much more probable cause than either pickled salmon or plums. Under the streets of our best drained towns and cities there is a widely-extended magazine of miasmata. That magazine is hidden from view, yet it is ubiquitous. It enters every court and alley, and during the heat of summer it is put into fearful activity, and night and day evolves many thousand cubic inches of foul air. And that foul air is often imperceptible to the senses. Nobody suspects it is evolved and ascends from every gully-hole, until previously to or during rain, when it is held in solution in the aqueous vapour of the atmosphere, and becomes perceptible to the sense of smell. People will answer you, if you inquire the condition of their house drainage, "Oh, it is very good; the drain in the back-kitchen never smells except against rain; it is very sweet indeed." Yet night and day a miasm is ascending from the cess-pool called the street drain, through the sink-hole in that "sweet back kitchen," and infecting the air of the whole house. But whether it stinks or not is of very little consequence; it may have no smell, or no unpleasant smell, and yet be a deadly poison. There is no smell in pure carbonic acid gas, and it is only an innocent odour of garlic that characterizes the fumes of arsenic; yet both these are deadly things. What is offensive to the sense of smell is injurious to the system or to some part of it; that is generally true; but the converse is not true; you cannot say that what is inoffensive to the sense of smell is not injurious. I hold it, then, as an established principle, that the malaria arising from the abominable sewers, especially in the metropolis, where water-closets and crowded church-yards abound, is the fruitful source of our summer epidemics; and you may rely upon this, that wherever you have cholera or typhus epidemic, there you have a source of malaria. I always inquire into this matter, and I always give the sufferer or sufferers a practical lesson in hygiene, whether they be poor or rich. You

find a family suffering from cholera or fever, and there is a filthy drain close by. You say to the head of that family, "Would you like to know why you all have the cholera? It is that abominable drain." The answer will be: "It is really most nauseous, sir, but our landlord will do nothing." "Well, then," answer, "pay a pound or two a year more rent, in a healthier spot, where the landlord will do something; you will more than save the sum in escaping sickness." Now, this is a way of effecting sanitory reform without an Act of Parliament, and a very effectual way too.

The philosophy of epidemical disease is a vast and profound subject; it is too extensive for a clinical lecture, but there are a few points which I will bring under your notice, for you must be armed with knowledge, or you will not be able to combat popular prejudice and ignorance. In the first place, how do the miasmata of drains act on the organization and develope the morbid phenomena we have discussed? How is it that it acts on the bowels and nervous system so decidedly? Let us look out for some analogies, and see if we can derive any practical information therefrom. Now, of course, the miasm is a poison; in small-pox, scarlet fever, measles, hooping cough, syphilis, hydrophobia, &c., &c., there is a morbid poison acting on the system, and acting upon a determinate class of organs. Though all affect the mucous surfaces, yet they appear on one portion of the surface rather than on another, and when they appear on the skin, they each select certain structures of the skin. We may fairly infer, then, that the miasm of cholera and typhus acts by this law of selection or affinity; it affects principally the mucous membrane of the intestinal canal; indeed, you will find many writers designating its prolonged phenomena as "abdominal" typhus, because there is ulceration of the Peyerian glands or follicles. You may next inquire, why do the various morbid poisons affect one structure rather than another? The answer to this question may be found in the answer to another question—Why do the various secretions and excretions pass off by their respective emunctories? When that question is answered, we shall be able to answer the other. In the meanwhile, I think we may fairly infer that, if a morbid poison resembles the excretion of any particular organ, it is not improbable that it will have an affinity for that organ, or for the tissues with which the organ has a functional or anatomical connection. Now, with regard to the intestinal canal and the functions of its mucous membrane, there is a diversity of opinions amongst physiologists. It seems probable, however, that gases of a lethal quality—gases that if retained would be poisonous to the system, and are purely excrementitious—are excreted from this mucous membrane, such as the compounds of hydrogen with carbon and sulphur. Now, these are just the sort of gaseous compounds which are given off from town drains, perhaps intermixed with other gases, but certainly of the same family, for they arise from fæces, and therefore likely to take the same course as the preceding when they have accumulated in the system. I think, however, that we may fairly infer that there is a specific difference (not a generic) between the miasm exciting cholera and typhus, and the miasm exciting yellow fever, or the jungle fever, or ague: they seem to seek another outlet, and therefore affect another class of organs—as the liver for example. In tropical climates, this organ is always unusually active. You may observe, too, that the action of the miasm of cholera and typhus is analogous to that of purgatives given medicinally; in fact, in large doses it acts just as a violent purgative, but ordinarily it is not taken in large doses, but has to accumulate, and when it has accumulated it may not produce any morbid results until the intestinal mucous membrane is placed in a morbid condition by some efficient cause, as the errors of diet I mentioned a while ago, or the depressing passions—as fear, which is a very efficient purgative sometimes. When the Asiatic cholera prevailed, people were warned against fear, and against taking saline aperients; and very justly, because they placed the intestinal mucous membrane in a morbid state, and thus that subtile poison

which came to us from the filthy, ill-ventilated, Asiatic cities, and is said to be coming again, had scope to act; the barrier of healthy resistance was broken down. I might as well observe, that probably the miasm of Asiatic cholera is generically analogous to that of our own cholera, but is more virulent, as most tropical poisons are, whether animal or vegetable. The proper and sure method to exterminate the Asiatic cholera is to introduce a stringent health-police into the cities of Asia. We shall never be absolutely safe until this be done.

Is typhus fever or cholera infectious or contagious? Here is a knotty point. Opinions have been pretty equally divided upon it, and maintained with a warmth that is truly astonishing. You will find the truth probably in the opinions of both contagionists and anti-contagionists. It is as certain that epidemic fevers arise from a miasm diffused in the air, as agues and tropical fevers; but I think it is equally certain that some, if not all of these miasms, may act so upon the fluids of the organization as to produce miasms, which, acting on another person, shall excite either a disease like the original disease, or another altogether dissimilar—a tertium quid. We know, certainly, that morbid poisons may be so modified. Scarlatina, or small-pox, may be either malignant or mild; if they attack a person, living in impure air, and personally unclean, the infection, although mild, as regards the person from whom it was communicated, will be malignant in the person affected, and the infection from him will be malignant. The converse will happen. The malignancy of miasm may be diminished by repeated transmission through healthy persons. Vaccinia, another example, is a very different disease from its parent, whether that parent be "the grease," a disease of the horse's heel, or variola. I believe there is a good deal of evidence in proof of the idea that syphilis is a modified form of the leprosy of the middle ages; and I rather think that a careful observation and inquiry would show that other contagious or infectious diseases undergo a similar metamorphosis—perhaps that all do—that it is a general principle. However, you had better in practice consider these fevers contagious or infectious, and that an inorganic miasm, especially that arising from decaying animal and vegetable excrementitious matter, may be changed into an organic, in passing through an individual whose condition is favorable to the metamorphosis. Such, I think, was the origin of the Eclair fever; malaria passed through the bodies of a crowd of filthy negroes, and was changed into a morbid poison; and there would have been desolation and mourning, I think, not only in the United Kingdom, but throughout Europe, if the miasm of that fever had escaped from quarantine.

Now infection is not absolute under any circumstances; it is always conditional, and it is conditional in various degrees. Some morbid poisons are more subtile than others; they require a greater degree of dilution, for you may dilute them till they are innocuous. If the streets of London, or of our large towns, were as narrow as they used to be in the middle ages, when epidemics were so rife, I believe we should have fevers as bad now as they were then, for the only difference is, that the fæcal accumulations of the people are collected a little way under the surface instead of upon it. There is the same amount of miasm, but more air passes over and through the streets, and dilutes it. Infection is conditional, too, as regards the recipient; a person, for example, who has once suffered, enjoys an immunity from any further attack. This is the case with many fevers—almost all, if not all, the exanthematous fevers, including exanthematous typhus. It is so also with yellow fever of a particular type, and some authors have made the same remark respecting the Asiatic cholera and the Levant plague. Probably the law rules more extensively than it has been observed to rule, and thus we may explain some of the fiercely opposing statements of the contagionists and the anti-contagionists. Infection is conditional, too, on the state of health of the organization that receives it, or even of the organs for which it has an elective affinity. Twenty persons travel across a marsh;

five have ague two days after, five seven days after, five three weeks after, five not at all—all get the miasm, nevertheless, at the same time. And no doubt the miasm of our drains, and of the diseases it excites, while it chiefly affects persons already subject to diarrhœa, in thousands and ten thousands of instances passes quietly through the system, just as other poisons will (mercury for example) and never produces its specific effects. People very often adduce this fact as a proof of the innocence of miasms and morbid poisons;—they will quote themselves as examples of persons who have never suffered, although often, nay, perhaps, continually exposed to infection. All you can answer is, that they ought to thank Divine Providence for an organization such that the poison is quickly thrown off. Why this happens is yet a mystery in physiology and pathology. I never yet heard or read an hypothesis which satisfactorily explained to me why a person who has had variola or vaccinia once, never suffers from them again. It is idle to say that the poison is not taken into the system. I suspect that the immunity is consequent upon some change induced by a previous attack in the elective affinities of the secreting organs; the miasm is, perhaps, excreted as soon as received, just as bile or urea is excreted as soon as formed. Why, I have no idea. But you have the facts of immunity from a previous attack—of immunity from habitual exposure—of immunity from a congenital organization—of immunity from excessive dilution—of immunity from unknown causes; and unless you bear these and similar facts in mind, in your investigations of the laws which regulate the origin and spread of epidemic diseases, you will be continually involved in contradictions.—During next session I shall, I hope, have an opportunity of stating the character and nature of these laws in considerable detail, with some new views and facts, and with strict reference to practical results.

It is well to know the topography of your professional work-circle, as the Germans call it, especially with reference to the origin of malaria and the course it travels (which will be the direction of the prevailing winds of the locality), and the efficiency of it, which will depend a good deal on the ventilation of the houses and streets, or courts—a good deal on the hygrometric tension of the atmosphere, and a good deal on the sorts of compounds from the decomposition of which it originates. I am inclined to think that the excretions of swine and of human beings give off the worst. I speak now of the source of civic malaria, and not of malaria generally; otherwise the miasms from salt water marshes are perhaps worse than these. The next in virulence are putrid water-butts and cisterns of water-closets, and emanations from water-closets themselves. Then the emanations from sewers, especially if connected with burial-grounds or slaughter-houses. Indeed, these latter belong to the first rank. Heaps of cow-dung or horse-dung are less injurious than the preceding, and chandleries follow after these. Sometimes cellars get flooded after heavy rains, and in summer send up a foul damp miasm, and this is bad. You must remember that the general tendency of these miasms is to ascend. When the wind blows up or down the river with force, I suspect it blows the miasm up the mouths of the drains which open into it; there is a back air as well as a back water, and this escapes through the gully holes in the course of the sewer.

*London Medical Gazette, August* 7, 1846, *p.* 229.

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4.—TREATMENT OF TYPHUS AND ENTERIC FEVER.—By Dr. Ritchie, Glasgow.

[Dr. Ritchie, in a paper "On the continued Fevers of Great Britain, and on the generic distinctions between Enteric Fever and Typhus," enters at large on this subject in the *Monthly Journal*, pointing out first the points of agreement, and secondly the points of distinction. Under the last head he has made some excellent remarks. He says,]

1. They differ in their ordinary exciting cause. Of a hundred cases of typhus 80 per cent. will be traceable to contagion; while of enteric fever, a proportion equal perhaps to 90 per cent. will as readibly be referable to exposure to a chill.

2. Unless under circumstances of strong predisposition, or of great intenseness of the contagious principle, typhus is seldom developed before the second week after exposure; but, in enteric fever, the commencement of morbid phenomena is usually quite consecutive on the application of cold and wet, its exciting causes.

3. The *modus operandi* of the exciting cause, and the procession of pathological conditions which give rise successively to the series of symptoms in each are different. It would be preposterous to assert that the contagion of typhus exerts its morbific influence on the cutaneous surface; and it is not less so to deny that the atmospheric agencies which are the usual, though not exclusive, cause of enteric fever, do so. The poisonous miasm from the living human body which excites typhus, operates on the nervous centres through contact with the ganglionic system in the lungs and stomach, and through the blood. It does so as a direct sedative; and, when its quantity is great, or its virulence undiluted, vital depression may be its only obvious consequence. In the more usual degrees of exposure, the animal powers, after sustaining a certain direct debilitating influence, are excited to a sanative effort. The tumultuary disturbance of all the organs to which this leads, at once occasions a deceptive appearance of inflammatory action; and, by aggravating, according to its violence, the debility which was previously present, insures the supervention of a state of collapse. In this stage there is diminished vital power and arterial action, united with accumulation of blood in the venous system, and hence arises a new train of effects on the brain, nerves, and venous capillaries, which, but for the element of periodicity, which tends to control healthfully every fever, would prove invariably fatal.

In enteric fever, again, the morbific cause may reach the cerebro-spinal axis either by the same course as that of typhus, or by the peripheral cutaneous branches of that system. The irritation in this latter case of the brain and medulla, and reflexly of the organs, is immediate, and the constitutional disturbance thus raised, while it often closely stimulates the corresponding stage in typhus, has this generic distinction, that instead of terminating from the sixth to the tenth or twelfth day in vital collapse and venous congestion, it is at the same dates sometimes succeeded by, and at others it is associated with the maximum development previous to ulceration, of follicular inflammation of the ileum, and often of the other intestines large and small. And from this period the pathological agencies to be feared are, not the accumulation of black blood in the veins of the brain, impeding all the functions of organic life and especially that of respiration, and the stagnation of all the peripheral veins, oppressing and often overpowering the heart, which are the noxious conditions to be resisted in the last stage of typhus, but simply the direct influence on the organic and other nerves, of the ulcerations of the intestines, and, should this be survived, the chance of hæmorrhage or of perforation of the walls of the bowels.

4. The general sequence of phenomena, and the relative proportions to one another of the various morbid conditions which constitute the two affections respectively, are different in each.

In typhus there is, after the reception of the poison, a variable period of incubation, distinguished by an impairment of all the functions, which is succeeded by about seven days of reaction, followed by about another week of subsidence or collapse, which again terminates, either in a similar period of convalescence or of accumulated complication.

In enteric fever, on the other hand, irritation of the cerebro-spinal system and of the intestines follow the application of the exciting cause, without the intervention of any distinct formative stage. The irritative or

tumultuous stage of enteric fever is its true initiatory stage, while in typhus this is constituted by a condition of depressed and diminished action. Neither is there any precision in the succession in enteric fever of a period of collapse to that of reaction, such as is observed in typhus, and when any approach to this does occur, the asthenia is far from being of that unmixed kind attended by sopor which is common in that affection, but is ordinarily counteracted by the local inflammatory complications, and the patient can commonly be aroused from it with comparative ease. The complexion of the case also is more varied by perceptible remissions and exacerbations than one of typhus would; and the period of crisis, instead of happening on the fourteenth day, as is the rule in the latter fever, rarely shows itself before the twenty-first, and more generally later. Its complications also are more numerous, and instead of requiring a curriculum of a month only for the completion of all its stages, which is about the average in typhus, this is more usually in enteric fever extended to three months.

[He sums up the method of treatment as follows:]

In typhus the general indication is to nurse the vital powers. This is done, 1st, during the formative stage, by early confinement to bed, and by a light cordial regimen; 2d, in the tumultuary or irritative stage, by such means as are fitted to moderate the nervous excitement, and increased vascular action, such as the gentlest laxatives, small doses of opium mixed with ipecacuan, tartrate of antimony, or acetate of ammonia, tepid sponging of the general surface, cold to the head, tepid or warm foot-baths, mild or cooling drinks, and farinaceous food. 3rd, In the stage of subsidence or collapse, by sustaining the heart's action, in proportion as it fails, with wine internally, and with the carefully maintained use externally, of warm fomentations to the trunk and limbs, aided in bad cases by ardent spirit added to the wine, and by more or less mustard to the fomentations. 4th, In the stage of complication, or of consecutive local disease, by modifications in the treatment now described, and by the addition of other appliances, according to the organ affected, the severity of the lesion, and the state of the strength.

In enteric fever, again, the chief indication is to destroy the inflammatory action in the follicles of the intestines, and in the lungs, when it exists there, consistently with a due regard to the irritation of the cerebro-spinal axis, and the loss of fibrine, and of red globules by the blood, which distinguish this disease from simple inflammation. This is to be done, 1st, by restoring the circulation and secretion of the skin by the warm bath, and a flannel under dress; 2d, by detraction of blood by cupping or leeches from the abdomen or loins; 3rd, by blisters, and afterwards constant warm fomentations to the abdomen; 4th, by the steady use of opium, united with ipecacuan, borax, and chalk, with or without catechu, and in doses proportioned to the severity of the diarrhœa, or, where this symptom resists these means, and the bronchitis is not acute, by the addition to the opium of acetate of lead; 5th, by a strictly farinaceous or a milk diet; 6th, besides these modes of fulfilling the indication mentioned, it is necessary to support the strength, in advanced stages, to the extent that the bronchitis does not prevent, by the use of small quantities of wine. Pneumonia is to be met by mercurial frictions externally, and by the hydrargyrum c. creta internally; and hæmorrhage from the bowels, by super-acetate of lead, and renewed blisters to the abdomen; or, when the fever of pneumonia forbids the employment of the acetate of lead, by the use of turpentine.

*Monthly Journal of Medical Science, October* 1846, *p.* 250.

5.—ON THE USE OF PREPARATIONS OF IRON IN FEVER.—By T. T. Tuckwell, Esq.

[In a letter to the Medical Gazette of July 24, Mr. Tuckwell alludes to

the valuable therapeutic efficacy, of one of our most useful and powerful tonics in the treatment of Typhoid Erysipelas. He says]

The medicine to which I allude is iron, and the formula I have adopted in its administration has been that of the mist. ferri co. (Ph. L.), substituting, in the place of the carbonate of potash, the sesquicarbonate of ammonia, if called on to prescribe when symptoms of debility are urgent, and death by asthenia is threatened. Some may feel inclined to attribute the success of this treatment as much to the stimulating effects of the ammonia as to any peculiar properties of the iron itself. Experience, has, however, convinced me that such is not the case, and that we have in the latter an agent capable of exerting great control over the disorder, and of improving the character of the constitutional symptoms attendant on the atonic form of the disease. The iron may be safely commenced as soon as any amount of gastric disturbance previously present has been removed, and when the febrile symptoms, by their change of character, betray an adynamic condition of the disease, and a sinking of vital power. A dull or dusky colour of the eruption, and the temperature of the part affected not exceeding that of the surrounding healthy portions of the skin, are good indications for its immediate employment. The presence or persistence of the symptoms of common inflammatory fever would of course contraindicate its use, and not until these have been removed have I ventured upon its exhibition. Where there is exhaustion of nervous power, I have much faith in valerian combined with the iron mixture; and should there be a tendency to coma, or it be actually present, turpentine as an enema, and by mouth, as recommended by Dr. Copland, is truly valuable.

*Medical Gazette, July* 24, 1846, *p.* 173.

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## 6.—ON THE PLAGUE.

At a meeting of the Academy of Medicine, M. Pariset observes that with pure air and water, with healthy food in moderate proportions, none of those singular mutations productive of death in man or animals could exist.—The excess of food or of abstinence, of labor or of repose, and sudden changes of temperature might cause disease, but never the plague. To occasion the plague, the air, water, or food, must introduce into the human system foreign elements of disease, and these were the emanations—the miasmata disengaged by the putrid bodies of animals and man. This was not only the opinion of the orator, but of the most respected authorities—of A. Parè, Diemerbroek, Pringle, Huxham, Haller—of the best observers, of the most learned physicians—and if in Europe these causes were neutralised by others, such as the sudden changes of weather, general habits of cleanliness, good food, and particularly the quality of the soil of our burial-grounds, yet they still cause the preliminaries, and almost the equivalents of the plague, in the shape of suffocations, syncopes, sudden deaths, ophthalmia, cephalalgia, diarrhœa, dysentery, and those malignant fevers so closely allied to pestilence, and those universal exanthemata seen by Diemerbroek, and observed by M. Pariset in Syria.

The composition of the soil of burial-grounds was in M. Pariset's opinion an important and interesting chemical question. Vicq d' Azyr saw at Toulouse two churches in which the dead bodies were naturally preserved; M. Danger had informed M. Pariset that in limy or argilaceous soils the decomposition of the bodies was followed with no emanation. M. Pariset further stated that in this respect corpses differed much from each other, and recalled the statement of Ammidianus Marcellinus on the different decomposition of the bodies of the Romans and Persians after the battle of Aminium.

It is, in M. Pariset's opinion, a probability nearly akin to a demonstrated fact, that the putrefaction of animal matter, and particularly of human re-

mains, is the cause of the plague. It would remain, therefore, only to discover if in the world one spot exists in which that morbid cause acted with sufficient intensity to produce the disease in a permanent manner. Syria had been talked of, and yet it was one of the healthiest lands in the universe. Scanderoun is, it is true, surrounded with marshes, but that city never had the plague before the year 1761, when the disorder was brought there from Constantinople or Egypt. The plague never begins in the interior of Lebanon, that long chain of mountains, the feet of which bathe in the sea. It is always in some maritime city, near the Mediterranean, that the pestilence originates—Byass, Tripoli, Beyrout, Scyde, Tyre, or St. Jean d'Acre. These towns always take the plague from Syria, and Syria from Egypt, and more rarely from Constantinople. This is true also for the Ionian Islands, Asia Minor, Adana—It is true even for Constantinople; there the few precautionary measures which have been taken have sufficed to arrest the inroads of the epidemic.

In M. Pariset's opinion, and as the result of his long observation in the Levant, he would say that only one country in the world existed in which the plague was permanent; that country was Egypt. But how is it then that this country, formerly so healthy, had now become a sojourn of ruin and death?—it was entirely due to the emanation from the human and animal corpses.

Ambrose Paré tells us that in 1562, the caves of the Castle of Pênes, filled with corpses to a depth of 300 feet caused by their fœtid emanation, several cases of plague in the province of Agenois. The same thing is to this day going on in Egypt, where formerly all putrescible matter was preserved in bitumen, in linen, jars, and stone coffins, and buried in caverns, more durable than temples or monuments. Now-a-days, on the contrary, the bodies are buried without preparation, and the heat of the sun makes Egypt an immense distillery of corpses. It is only by endeavoring to remedy this order of things, by removing cemeteries to the desert, and cutting canals for the alkaline waters of the Nile, that the country can ever be made healthy. M. Londe then read a letter which he had received from Clot-Bey, of which the following is an abstract:—"1st. It was as impossible to point out the date of the first plague, as that of the first appearance of yellow fever, cholera, or any other epidemic disorder. 2nd. The commission considered the plague as analogous with typhus, forgetting that typhus never assumes a general epidemic character, that it is a disease of all countries, that its causes are always appreciable; that typhus could be at will produced artificially; whereas the plague requires special conditions of climate and season, that no artificial means whatever can produce it. 3rd. Not a single case of contagion of the plague in European Lazarets has yet been brought forward, and it is proved that the unloading of the bales of cotton from Egypt has not yet, in one solitary instance, communicated the plague.—4th. It is as impossible, by hygienic regulations, to destroy the plague in the Levant, as it is to destroy yellow fever and cholera, because neither the climate nor the physical constitution of the Eastern countries can be modified. It is a mistake to attribute the immunity enjoyed by Turkey and Egypt, during three years, to the few sanitary laws lately enacted; before these laws were enforced, periods of ten years had elapsed without the plague making its appearance. *Medical Times, July* 25, 1846, *p.* 323.

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### 7.— DIFFERENTIAL CHARACTERS OF MEASLES AND SCARLATINA.

[M. Chomel, in clinical observations on two patients recently admitted to the Hôtel Dieu, dwelt on the distinctive characters of the eruption of measels and that of scarlatina. Occasionally the eruption in scarlatina, instead of presenting a decided and uniform redness, is punctated, and so similar to that of measles as to require some attention to distinguish it. By

aid of the following characters a mistake may be avoided.—When the eruption of scarlatina is punctated, the spots are equal, uniform, symmetrical, and their colour is every where the same, as are also the volume of shape of the minute vesicles often present. Measles, on the contrary, present a great diversity in the colour, the shape, and the size of the spots. Again, small miliary tubercles occur pretty commonly in scarlatina, and but seldom in measles; furthermore, small subcutaneous ecchymoses occur in measles, but not in scarlatina.

M. Chomel considers another character as quite decisive, which is not, however, mentioned by authors: this is the aspect of the sputæ in measles. Those sputæ consist of opaque mammular masses of a grayish colour which float in a quantity of liquid; at first sight they resemble the sputæ of the second stage of phthisis, but independently of the concomitant circumstances which render a mistake in this respect impossible, the sputæ of measles differ from those of phthisis in this, that the liquid in which they float is transparent in phthisis, while in measles it is thick and viscid. This character of the sputæ has not been noticed by authors, doubtless because they have described the disease as it affects children who do not expectorate.—*Gazette des Hôpitaux.* *Dublin Medical Press, July* 29, 1846, *p.* 70.

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8.—ON THE CONTAGIOUSNESS OF PUERPERAL FEVER, AND ITS INTIMATE CONNEXION OR ASSOCIATION WITH ERYSIPELATOUS AND PHLEBITIC INFLAMMATION.—By Dr. Peddie.

[The conclusions of Dr. Peddie are much the same as those of several authors whose views will be found in preceding volumes of this Retrospect. They cannot, however, be too often impressed on the minds of every practitioner. Dr. Peddie arrives at the following conclusions:]

1. That a specific virus, of an animal nature, is produced under certain circumstances, and in turn, generates a peculiar form of fever in the puerperal state.

2. That the virus frequently originates from erysipelatous inflammation.

3. When once generated, it may be communicated from one lying-in patient to another with extraordinary virulence, quite independently of locality or epidemic influence, either by direct intercourse, or through the medium of a third person; and that this is more likely to happen where the predispositions of a weak body and a depressed mind exist.

4. That it may also produce disease of various kinds in non-puerperal individuals; more especially of an erysipelatous and phlebitic character.

5. That the treatment of a contagious puerperal fever, whether directed by theoretical opinions, or the indications of physical signs, proves of little avail; but that if any theory is to be entertained respecting this malady, it should be that something of a specific and morbific nature requires to be thrown out of the system, and the powers of life at the same time sustained; and that the practice which holds out the greatest prospect, small at best, of this being accomplished, is the adoption of the diaphoretic and stimulant plans, according to the stage of the disease.

6. That the principal concern of the medical man should be (seeing that a cure is so rare) to adopt every conceivable precaution against the occurrence of a single case of this disease, or to lessen the risk of its propagation. And to attain these ends patients in child-bed should either not be attended at the same period with cases of malignant or severe erysipelas, or that proper caution should be observed as to ablutions, more especially after contact with any discharge from such patients; and when a case of puerperal fever does occur, lest it should be something more than sporadic, chlorinated ablutions and change of garments is first required; and should a second case occur, it would be the safest plan for the practitioner to abandon the practice of midwifery for a time—two or three weeks, if possible—

and in the interval attempt, by removal into the country, warm baths, and other alterative and purifying means, and by the exposure of his clothing to a free atmosphere or a high temperature, to rid himself of the subtle and powerful virus which adheres to him so tenaciously.—*Monthly Journal of Medical Science. London Medical Gazette, May 8, 1846, p. 835.*

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## DISEASES OF THE NERVOUS SYSTEM.

9.—ON TUBERCLE OF THE BRAIN IN CHILDREN.—By J. M. Adams, Esq.

[Mr. Adams unites the statements of M. Rilliet, Dr. Hennis Green, and others, with the results of his own experience on this form of disease; he does not, however, include tubercular disease of the meninges, the tubercular meningitis or arachnitis of the French. He describes the affection as follows:]

A child of a few years old, of a scrofulous habit or tendency, is affected for several weeks or months with headache of an intermitting character, often accompanied with vomiting or nervous tremors. These are followed by a sense of debility and disinclination for motion or ordinary sports and exercises. Epileptic seizures, convulsions, or strabismus, may also be present. Gradually the disposition of the child alters, and he appears fretful, retired, and melancholy. The appetite becomes depraved, or entirely fails, the bowels constipated, and the body attenuated. The face acquires a peculiar pallid, anxious expression. As the disorder advances, these symptoms, at first partial and intermitting, increase in frequency and severity, and at length are permanent; when, after several days of complete or partial stupor, the child dies comatose or convulsed.

Among other particulars it is mentioned—That the appearance of the countenance is worthy of note. Dr. Gerhard informs us, that it is so peculiar, that the sister of one of the wards at the children's hospital was accustomed to distinguish the disease with much accuracy, from the mere aspect of the child. The face is pale, with occasional flushes of redness on one or both cheeks; mouth frequently a little deviated; lips compressed or half open; the eyelids are almost invariably closed, or a little separated; nostrils widely dilated. But the most distinctive character is the peculiar listless expression, with occasional grimaces and movements of the lips, as if tasting an article of food; this character does not admit of description, it must be seen to be appreciated.

It is further observed, that—An acute form of the disease is occasionally met with, having a rapid course, and the symptoms of which are so closely assimilated to those of acute hydrocephalus, that they alone will hardly furnish sufficient data for a correct diagnosis. There are few practitoners who are in the habit of verifying their opinions and practice by necroscopic observations, who cannot recal to their remembrance cases of "acute hydrocephalus," where inspection, after death, showed the presence of tubercules in the brain, but which were regarded at the time as a mere evidence of an unhealthy constitution or anomalous coincidence, and not as having any especial connection with the disease for which the patient had been treated. Such cases generally terminate fatally, within a period of a fortnight or three weeks, and the symptoms accord pretty nearly with the following description:—During a state of ordinary health, and after some violent exciting cause, as a blow or fall, or more frequently when convalescing from some infantile disorder, a child is suddenly seized with convulsions, headache, or vomiting, followed often by paralysis of the lower limbs or one side of the body; the bowels are commonly constipated, and the appetite fails; the intelligence meanwhile remains good. The child continues in this condition for a period varying from a few hours to a fortnight, and seldom longer than three weeks, and death finally ensues, attended with coma or convulsions.

[To show the period at which the disease generally manifests itself, Mr

Adams divides the time it is usually met with into four periods. Out of 131 cases, under 15 years old, there were 16 cases under 3 years, 44 from 3 to 5 years, 57 from 6 to 10 years, and 21 from 11 to 15 years.]

It thus appears that, under the age of three years, and above that of ten years, the disease is comparatively rare; while from three to ten years it is of most frequent occurrence; the two periods mentioned giving respectively 37 and 101 cases. The collective ages of these 131 patients gives an average of rather more than six and a half years, and about this age, which corresponds with the commencement of the second dentition, it will be found that the majority of cases occur.

Tubercles are found in the brain in three distinct forms: 1st. Isolated in rounded portions, from the size of a millet-seed to that of masses five inches in thickness. 2d. As a layer of tuberculous matter, situated between the membranes and external cineritious substance of the brain, commonly following the direction of the sulci, and modelled on the external surface of the brain. 3d. Infiltrated in the substance of the organ. The first of these lesions is by far the most common, the second variety is uncommon, the third exceedingly rare. All the cases that have come under the author's own notice, and nearly all that he has found recorded, belong to the first description.

The affections with which tubercles of the brain may be confounded, are acute and chronic hydrocephalus, cerebriform tumours of the brain, hydatids, arachnoidean hæmorrhage, and hypertrophy of the brain. Now, the symptoms to which each and all of these may give rise, are so associated and so much alike, that it would be exceedingly difficult to classify them, with anything like precision; yet there are circumstances in the history of the patient, and also of these different affections, which increase or lessen the probabilities of their existence, and these should be considered in detail, as the cases present themselves. The author alludes, briefly, to some of them.

Thus, chronic hydrocephalus is rare after the age of three years, while it is mostly after that period that the hydrocephalus of tubercle is observed. True epileptic seizures, or amaurosis, independent of general insensibility, so frequent in the tubercle, are, Dr. Adams believes, rarely noticed in uncomplicated hydrocephalus, either chronic or acute, but mostly in connection with tumours or growths within the cranium. Cancerous tumours of the brain produce symptoms so analagous to tubercle that it would be affectation to draw a marked line between them. But the researches of Dr. Walshe establish the fact that cerebral cancer is of very unfrequent occurrence in early life, but that it becomes more common with advanced age; for of fifty-six cases of cerebral cancer occurring in individuals up to eighty years of age, there were found only five instances under the age of ten years. It will be recollected that cerebral tubercle occurs in an increased ratio; consequently, when there is evidence of the presence of a cerebral tumour co-existing with a scrofulous diathesis, the chances of its being cancerous are reduced almost to zero. The author lays great stress upon the existence of a well-marked scrofulous constitution, as a diagnostic sign in cases of this description.

It is, therefore, from a knowledge of the frequent occurrence of tubercle of the brain in children, from the presence of a strumous diathesis, from the irregularity of certain well-marked cerebral symptoms, and the irregular intervals which separate one symptom from another, that the diagnosis of this affection mainly depends. An attack of epilepsy may not be succeeded by any appreciable sign of ill health, for several months or a year. But if in a child so affected, and which besides gives evidence of a scrofulous diathesis, there should occur headache, vomiting, nervous tremors, paralysis, amaurosis, change of temper, &c., each or all of these symptoms, if they follow a variable course, having intervals, exacerbations, and accesses of fever, in the manner I have previously described, we have then every reason to believe that the child has tubercle of the brain.

With regard to treatment, the author has nothing to say. The complaint appears to have been invariably fatal; and the treatment hitherto employed seems not even to have afforded the poor satisfaction of mitigating symptoms. In the way of prevention, there is greater encouragement to the medical man, for he can adopt such means in strumous families as are likely to strengthen the general health, and to counteract the tendency to so fatal a malady. *Medical Gazette, July* 24, 1846, *p.* 166.

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10.—REMARKS ON RECENT CASES OF CEREBRO-SPINAL ARACHNITIS IN THE IRISH WORKHOUSES AND DUBLIN HOSPITALS.—By E. Mayne, M. B., &c. &c.

[This disease attracted a great deal of attention in France during the years 1840-1 and 2, having occurred in an epidemic form. The subject was laid before the Royale Académie de Médécine. It has shown itself in three different localities in Ireland, the attention of the profession being first called to it by Dr. Darby, of Bray.]

Its pathology seems to have been nearly uniformly the same, wherever examined: the serous membrane covering the brain and spinal marrow has been found invariably the seat of extensive inflammation; and, unlike the more ordinary forms of arachnitis, the spinal arachnoid always suffers much more severely than the cerebral.

In the post mortem examinations which have fallen under my notice, the scalp and dura mater exhibited but little undue vascularity; the pia mater covering the hemispheres of the brain was congested, and the large veins in their way to the several sinuses appeared remarkably turgid.

The free surface of the cranial arachnoid felt dry and clammy, and had lost its transparency in many places, particularly at the base of the brain; but there was no lymph or other inflammatory effusion in the sac of the arachnoid. Lymph of a yellowish or greenish hue appeared on the surface of the encephalon *beneath* the serous tunic; this occurred sparingly on the upper surfaces of the hemispheres, and there only along the sulci, but at the base of the brain it was found in greater quantities, especially in the sub-arachnoid space corresponding to the circle of Willis, where many of the cerebral nerves at their origin were fairly imbedded in it.

In the spinal canal a similar exudation filled the sub-arachnoid space; it there existed in sufficient abundance to envelope the cord completely; it also extended down to the lowest extremity of the cauda equina, investing each of the spinal nerves at its source; but in the vertebral canal, just as in the cranium, the cavity of the arachnoid contained none of this morbid secretion. The substance of the brain and spinal marrow appeared remarkably free from lesion; there was no unusual vascularity, induration, or softening apparent, nor did the ventricles betray any evidence of inflammation.

In the cases reported, however, the brain and spinal marrow are stated to have been occasionally implicated; in some the ventricles of the brain contained inflammatory effusions and the choroid plexuses appeared unusually vascular, in others more or less of the substance of the brain and spinal marrow was found in a state of softening; in a certain number sero-purulent effusion was detected at the base of the brain and in the theca vertebralis; but in every instance the serous membrane was the part essentially engaged, whilst the nervous material seldom suffered, and when affected it was only accidentally involved, the disease having been in such cases evidently propagated to the substance of the cerebro-spinal axis from its membranous investments.

[It is a very remarkable fact that in Ireland nearly all the cases were boys, and under twelve years of age. In France it appeared most amongst conscripts who had recently joined the army. In most of the cases the

disease has come on very suddenly. In the South Dublin Union Workhouse the boys had generally retired to bed in good health apparently, when the disease all at once declared itself.]

In many instances it commences with severe pain in the abdomen, followed immediately by vomiting, and not unfrequently by purging. In the worst cases these symptoms are accompanied by marked collapse, the extremities are cold and blueish, the pulse is at this time a mere thread, and, altogether, the disease assumes very much the aspect of cholera. After the lapse of a few hours, reaction, more or less perfect, ensues; the muscular system then presents characters which may be considered almost pathognomonic. The muscles of the extremities, and those of the neck in particular, become remarkably rigid, the head is drawn back upon the vertebral column, and firmly fixed in that unnatural position; no efforts of the patient can bend it forwards, neither can the attendants do so, at least by the employment of any justifiable force. The countenance at this period often assumes very much the tetanic expression; twitching of the muscles of the face sometimes ensue; the patient loses in great measure the power of moving his extremities, so that he is quite unable to assume the erect position, the surface becomes hot, the pulse full and frequent, (from 120 to 140); the stomach often continues irritable, whilst an insatiable thirst torments the sufferer; and the epigastrium evinces marked tenderness upon pressure.

Symptoms of a still more distressing nature quickly supervene: the patient may be seized with general convulsions, of frightful severity, requiring personal restraint to protect him from injury; or he may lie in a semi-comatose condition, constantly moaning and grinding his teeth, or even crying incessantly. Towards the close of his sufferings, he generally merges into perfect coma, the pulse becomes slow and laboured, the powers of speech and deglutition fail, his stools are passed involuntarily, and death finally closes the scene. All this may occur in a surprisingly short space of time; some of the cases ran their course in forty-eight hours, and the greater number terminated about the fourth day, whilst some few were prolonged over a fortnight or three weeks. Examples are on record of death from the disease in so short a period as fifteen hours.

It should be mentioned, that although in some cases symptoms directly indicative of mischief within the cranium were early observed, such as pain more or less intense in the head, heat of scalp, congestion of the conjunctiva, strabismus, intolerance of light, &c., yet in many no such evidence occurred, until the laboured pulse, the dilated pupil, the profound coma, or the severe convulsion, told but too plainly that the death-struggle was at hand.

[The cases in Ireland have generally proved fatal, although treated by several different physicians. In France, however, the mortality was still greater than there; one physician having lost 29 out of 30 cases committed to his care. The French appear to have lost sight of the advantages to be looked for from mercury in these cases, whilst in Great Britain and Ireland the chief dependence is placed upon it. There is no doubt from this affection appearing in many places at the same time, and from its not being propagated by contagion, that this disease is of an epidemic character.]

*Dublin Quarterly Journal of Medical Science, Aug.* 1846, *p.* 95.

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11.—TRISMUS NASCENTIUM.—ITS PATHOLOGY AND TREATMENT.—By J. Marion Sims, M. D., of Montgomery, Alabama, United States.

[Trismus Nascentium has always been regarded, and very justly too, as one of the opprobria medicorum. Its causes, remote and exciting, have ever been points of debate and conjecture, and of its true pathology we have never had any settled opinion. Its treatment has consequently been

one of varied empiricism. It will be my endeavour, continues Dr. Sims, to point out the peculiar causes of this disease; to explain their modus operandi, to demonstrate the seat of pathological changes, and to deduce a rational course of treatment; and shall begin by relating a case as the foundation of the remarks that follow:—

The patient, aged 26. On the 15th July, 1845, she was taken in labour of her 5th pregnancy, and delivered of twin girls again. One was apparently still-born, and could be with difficulty made to live. It however went on well until the 21st, when it refused to suck. On Tuesday it screamed a good deal, its jaws still closed, and with the addition of occasional spells of jerking or spasms. On Wednesday, about seven o'clock, P. M., Dr. Sims saw it for the first time, being forty-eight hours from the time of the attack. its body was rigid; legs straight and stiff; the toes everted, and heels resting against each other. If the heels were separated and let loose, they would suddenly fly together, like the blades of a spring forceps. The arms were pinioned to the sides; the fore arms were firmly flexed at right angles; the hands clenched tightly, and the jaws were closely locked. The least effort to extend the forearm, caused great pain and excited general clonic spasms; the expression of countenance was mild and serene, notwithstanding the great rigidity of the body and extremities, till the supervention of clonic spasms which happened every few minutes, either spontaneously or as the result of some exciting agent, such as sound, motion, or the lighting of a fly on the face, when the whole frame seemed to become more rigid, the hands more tightly clenched, with a quivering motion, giving it the appearance of "shaking the fist." The jaws were closely locked; the head jerked backwards; the lips compressed; the cheeks elevated; and these symptoms accompanied with a mournful whining cry. This aggravation of symptoms would last from three to fifteen minutes, and then would come on the clonic spasms as already described. Deglutition was somewhat impeded, but not suspended. The condition of the pupils could not be ascertained in consequence of exciting spasms by any effort at separating the lids; respiration greatly accelerated; bowels costive. The child had taken syr. rhei., magnesia, and occasionally tr. opii, but without effect. Ordered warm bath, cal. oil, and enemata. Found the child worse on the next day (Thursday), all symptoms increased in intensity; ordered "Dewees Colic Mixture," as an antispasmodic, which was supposed to have exerted some little influence in moderating the spasms. Thursday evening—still no better. Gave two grs. of quinine in two doses, in some of the colic mixture. Next morning (Friday), worse than ever, and not able to swallow at all; spasms more frequent; general rigidity, greater than at any time before.]

My friend Dr. Vickers visited the little sufferer with me this morning. Many experiments were performed to demonstrate, before the Doctor, the reflex action of the excito-motor system and its exceedingly delicate impressibility to the gentlest touch. To show the great rigidity of the frame, I caught hold of the feet and raised the whole body without flexing the thighs on the pelvis. At last I run my hand under the head for the purpose of elevating the body in the same way, when I immediately detected a remarkable irregularity in the feeling of the bones. It had lain during the whole of its illness exactly in one position all the time, the weight of the head resting wholly on the os occipitis. Its pulse was now uncountable; respiration more frequent than I had ever seen it before under any circumstances; it was breathing 120 times in a minute, and looked as if it could not possibly live an hour. I raised it up to examine the head more particularly, and set it on my knee, or rather leaned it against the knee, for the tonic rigidity of the muscles prevented the flexure of the thighs to a sufficient degree for the sitting posture.

After holding it so for some ten or twelve minutes, what was my surprise to find a rapid amelioration of all its bad symptoms! True, the tonic rigid-

ity remained the same, but the clonic spasms became less frequent and less intense; the whole expression was less disturbed; and the respiration fell, in this short space of time, from 120 down to 70 in a minute. I now felt convinced that *position* had a great deal to do in the production of this disease. On examining the head, I discovered that the fontanelles were open and very large, particularly the anterior, that the bones were loosely attached by their commissures, and that the os occipitis was pushed in on the brain, being overlapped for a quarter of an inch or more along the whole course of the lambdoidal suture, by the edges of the ossa parietalia. I had the child laid on its side, so as to take the weight of the body from the os occipitis. It died about sundown, on Friday, 25th July, having been sick about 96 hours.

Through the kindness of Mr. Stickney, and with the consent of the mother, a post-mortem examination was made the next morning at ten o'clock. I am indebted to my friend Dr. Ames for the following notes made at the time. "No emaciation; countenance tranquil; slight cadavaric discoloration of back.

*Head.*—Anterior fontanelle large, triangular; coronal suture open in its full extent; sagittal same, open to ossa nasi; parietal bones overlap the frontal slightly; the occipital for the fourth of an inch along the whole of the lambdoidal commissure; gentle pressure on the occipital bone projects the brain forward, producing a considerable fullness of the anterior fontanelle.

"*Brain.*—Superficial vessels full of black blood, particularly posteriorly. Interior of the brain natural in appearance.

"*Spine.*—Coagulum of blood occupying the spine in its whole length, enveloping perfectly the medulla spinalis; thicker as it approaches the brain. Spinal veins full of black blood.

"Thoracic and abdominal viscera healthy; nothing unnatural about the appearance of the umbilicus."

Curling, in his admirable "Treatise on Tetanus," tells us that "Dr. Goelis, of Vienna, in the examination of children who have died of this disease in the Foundling Hospital of that city, found an appearance of increased vascularity in the substance of and in the membranes enveloping the upper part of the spinal marrow." And that Dr. Thompson of Philadelphia, had also observed the same thing.

M. Billard (Stewart's edition, page 490), says that he "found on dissection nothing more (!) than an effusion of a quantity of coagulated blood in the spine. This blood was effused between the two laminæ of the tunica arachnoidea, and filled the whole of the medullary canal from the medulla oblongata to the sacral region." And after finding this morbid appearance and no other, he gravely asks the question, "Were the symptoms of tetanus to be ascribed to this hæmorrhage of the spine?" What more did he want to account for the distressing symptoms and fatal termination of the disease than this "hæmorrhage of the spine?" Did ever cause and effect stand more intimately connected? Is not the presence of this effusion a sufficient explanation of all the phenomena of the disease? Are not the tetanic spasms the very result that we would reasonably and almost invariably calculate on finding in "spinal hæmorrhage? I think so. And, as the real character of this affection has evaded the efforts of all pathological inquirers—Goelis, Thompson and Billard being the only writers that I can find who agree on any single point relating to it—and as my observations are wholly corroborative of theirs, I must here insist that the true seat of the disease is the spinal canal; that its morbid anatomy consists, first in a congestion, and then in a rupture of the minute veins and capillaries of the medulla spinalis. That this is the special and pathognomonic feature of the disease, while every other alledged cause and explanation of symptoms are but mere coincidences.

The next question that naturally arises, is, what produces this venous

congestion and capillary rupture, this effusion of coagulated blood, this spinal apoplexy, if I might be allowed to apply a term significant of the abnormal appearance? I answer that a simple and ample explanation may be found in the anatomical peculiarities of the fœtal cranium, and spinal circulation, in connection with the imprudent and careless habit in mothers and nurses of allowing infants to remain too long in one position. The imperfect ossification of the cranial bones is essential to the production of the disease, while the position of the child is its accidental or exciting cause.

I shall leave out of consideration all those circumstances and agencies which have always been regarded as exercising a remote or predisposing influence over the development of this disease, and engage at once in the demonstration of the above proposition. And first of the fœtal head.—At birth the bones of the cranium are very thin, without diploe, attached only by membranous interstices, called commissures; which is certainly one of the wisest provisions of nature in thus fitting it to be accommodated to the dimensions of the pelvic cavity.

What are the anatomical peculiarities of the os occipitis? Why, it is composed of four separate pieces at birth. "The first and largest extends from the beginning or angle of the lambdoidal suture, to the upper edge of the great occipital foramen. Each side of the foramen and the condyle on it is formed by a distinct piece. The front part is formed of the cuneiform process, which is separate from the other parts and forms the fourth piece." —(Wistar.) The posterior fontanelle occupies the point of junction between the saggital and lambdoidal sutures; the lambdoidal suture separates the occipital from the parietal bones. At the juncture of the temporal with the last-named bones, we have another fontanelle, called the mastoid or posterial lateral. From the lower end of this fontanelle, just behind the foramen lacerum, a line of division from the imperfect ossification, may be seen running obliquely to the posterior edge of the foramen magnum, thus separating the "pars occipitalis," from the "pars condyloidea." Now by this arrangement, we see that the "pars occipitalis," is, as it were, perfectly isolated from all solid or bony union, having only a membranous connection above, and a semi-cartilaginous one below. This is a provision of nature to diminish the vertical and biparietal diameters of the head during the process of labour: for in every labour the "occipital" portion always slides beneath the parietal, however slightly the head may be compressed."—(Moreau.)

The head by the labour, is elongated in the occipito-frontal diameter to its greatest possible extent, and it is consequently diminished in its vertical diameter to its smallest dimensions, by the parietal bones overlapping the occipital through almost the whole length of the lambdoidal suture. The edge of the occipital is always forced up under the edges of the parietal at the posterior fontanelle in every labour. There is not an exception to this rule. Now, as the parietal are compressed laterally, to diminish the byparietal diameter, they exercise a degree of traction over the "pars occipitalis" (independently of the forces acting on it from behind), drawing it upwards in a line towards the anterior fontanelle, and thus shortening the vertical diameter. After birth, the bones of the head gradually acquire their proper relative position: the head loses measurably its elongated shape; its vertical diameter increases; the occipital slides slowly from under the parietal; the frontal become more prominent; and the whole cranium assumes the normal oval appearance that of right belongs to extra-uterine life.

Now, suppose the fœtal cranium is not sufficiently well ossified to regain its proper shape by its own inherent elasticity; or, suppose the child is imprudently retained for a length of time in the recumbent posture on a hard mattress, or a folded blanket with a little bit of hard old quilt, or a bunch of dirty clothes (as we often find amongst negroes), wadded up and stuck

under the occiput, what will be the consequence? Why, the occipital bone, instead of regaining its proper position, will be pushed further under the edges of the parietal, and the whole weight of the head resting on the occipital protuberance will thus force the entire "pars occipitalis" upwards. If this condition is persisted in, the whole cerebral mass will be displaced; the cerebellum will be compressed between the fossæ cerebelli and the tentorium; and it will thus be tilted forwards so as to produce great pressure on the the whole tract of the medulli oblongata as it rests on the basilar process of the os occipitis. What is the result of this long-continued mechanical pressure, with its peculiar displacements? The circulation through the sinuses and veins of the brain is retarded; the compression of the cerebellum obstructs the cerebellar veins; the posterior edge of the foramen magnum becomes a constricting point on that portion of the medulli-spinal veins which empty their blood into the inferior cerebellar; the force communicated to the medulla oblongata powerfully obstructs that portion of the medulla-spinal veins which run forwards over the anterior or lateral edges of the foramen magnum to empty themselves into the petrosal sinuses; and thus the spinal venous circulation as connected with the brain is entirely cut off.

What is the consequence of this constriction, this ligaturing, as it were, of the medulli-spinal veins? Why, at first, there is a simple venous congestion within the dura mater of the cord, produced exactly in the same way that we effect in the veins of the hand and forearm in the ordinary every-day operation of venesection. After a while the long tortuous network of thin delicate medulli-spinal veins is overcome by the persistent constriction above; the blood is extravasated within the dura mater of the cord, enveloping the medulla spinalis perfectly; and then we have the aggravated symptoms that always mark this infallibly fatal stage of the disease.

What is the reason that extravasation does not take place as soon as the constriction is made at the edges of the foramen magnum? Because the medulli-spinal veins communicate by transverse branches, with the great spinal lying exterior to the dura mater, and thus the blood is carried into the general circulation by their anastomoses with the vertebral, intercostal, azygos, lumbar, and sacral veins. But let the child remain long in this position, and this collateral circulation becomes obstructed. By force of gravitation the spinal veins all become congested; there is no vis-a-tergo to drive the blood horizontally forwards, or I should say (as the child lies on its back,) perpendicular upwards; it almost ceases to flow; and the medulli-spinal ligated above and dammed up on all sides, having no outlet for the blood brought down by the anterior and posterior spinal arteries, must necessarily very soon yield and pour out their contents within the tube of the dura mater. To my mind it is clear that the assemblage of symptoms constituting trismus nascentium, is the result of pressure on the spinal cord exerted by venous congestion and extravasation; and it is equally clear that this effused blood is produced in the way that I have described." *American Jour. of Med. Science, April*, 1846, *p.* 363.

[The Editor of the Monthly Journal, in commenting on this view of Dr. Sims, makes the following very judicious remarks:—]

The view taken in the paper condensed above is very interesting, and most probably is in some measure well-founded. But ingeniously as it is wrought out, there is not a sufficient number of examples brought to bear on the conclusion. A prima facia case is made out, and what is wanting is a series of instances presenting the two conditions—namely, a defective ossification of the bones, and the unusual confinement of the infant to the supine position. And of this the author is well aware, as he calls on his medical brethren, where opportunities of observation are offered, to investigate their cases on the grounds which he suggests.

The supine position is so commonly chosen by nurses for infants, as to fail in the satisfactory characters of an exciting cause; and, again, the prevalence of trismus nascentium, under particular circumstances as among negro infants, hardly accords with the idea of defective ossification being an essential condition of its occurrence. It seems extremely probable, however, from the facts stated by our author, that defective ossification really gives an unusual disposition to the disease, and that the careless management of the position of infants, apparently so common among negroes, concurs with this cause, in many instances, to produce extravasation, within the spinal canal. It should not be forgotten, that in this country many curable instances of the slighter forms of trismus nascentium are currently thought to be dependant on irritation of the bowels, removeable by purgatives.

Were our author's views absolutely and exclusively correct, it would surely be a more commonly fatal cause of death among infants in this country. We have heard it affirmed by practitioners from the British West India Islands, that this disease has become much less frequent among negro infants, since emancipation, owing to the greater care bestowed by the mothers on a free offspring. *Monthly Journal of Medical Science, July*, 1846, *p.* 76.

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12.—CASE OF TRAUMATIC TETANUS, FROM THE ATTEMPT TO EXTRACT A TOOTH, CURED BY ICE APPLIED TO THE SPINE.—By John E. M'Gibr, M. D.

A lady, 20 years of age, applied to a dentist to extract the second molar tooth on the right side of the lower jaw. The tooth broke, and after several ineffectual attempts to remove the stump, some caustic supposed to be nitric acid was applied, and the patient went home. Five days after tetanus came on. Two days after its commencement she was found in the following state: From one to four spasms occurred every hour. At two P. M. the worst occurred; and from that time until the turn of the night, they were very frequent and severe. The jaws were tightly locked; opisthotonos was severe, and there was a pain and retraction at the epigastrium, returning every twenty or twenty-five minutes, followed by excessively violent paroxysms—three generally succeeding each other within a minute's time. The temporal and masseter muscles were the seat of very great pain. The head was thrown back, and every muscle was in a state of rigid contraction. She answered by signs, and there were severe pains shooting from the sternum to the spine. Swallowing was performed with the greatest difficulty; and twice on that day the very effort produced spasm. The belly was very hard and painful on being pressed; and, when pressed upon, muscular twitchings agitated the entire body. These twitchings were constantly present between the spasms, and the muscles of the entire body were affected during the paroxysms. The muscles of the head, neck, throat, chest, extremities, hands, and fingers, were painfully contracted. "The eyelids were drawn down tightly over the eyes; the patient could not move them; and when I raised them up, which I found it difficult to do, the eyes were turned up. The countenance was so much distorted, that I would not have recognised her as one with whom I was well acquainted." The pulse was wiry and beating 130. There was suppression of urine for twenty-four hours. No account appears of the treatment during the first two days; on the third a blister was applied from the temple of one side to the chin, the dressing being of mercurial ointment and muriate of morphia: bags of ice were applied to the whole tract of the spine; and a grain of muriate of morphia was ordered every hour, which was continued till stertorous breathing was induced. There was no remission in the early part of the night, but about four in the morning she fell into a quiet sleep, and awoke greatly relieved. During the next twenty-four hours she had in all eleven spasms, six of these

being during two visits of the medical attendant. In the course of the fifth day, she had only three slight spasms, and these occurred at one visit, and in the evening of the same day the jaw became relaxed and moveable. On the seventh and eighth day, there were one or two slight spasms, and none afterwards. On the fourth day, she vomited some dark green matter, and the vomiting was followed by some of the spasms already reckoned up. She did not speak or open her eyes till the evening of the sixth day, but, though the eyes were opened, she could not distinguish light from darkness till the evening of the seventh day, and the eyesight was not completely restored till the thirteenth day, the recovery of sight being preceded by an evacuation of blood and mucus from the bowels, and the stoppage of the menses, which had ceased at a regular period two days before the tooth was broken, and had recurred on the seventh day. Besides the symptoms already noticed, she said she had felt a tingling sensation passing up from the extremities, and suffered pain shooting from the sternum to the spine, and she described this pain as having been terrible till the ice was applied; as late as the seventh day she complained of pain in the temporal and masseter muscles; and on the same day she spoke of numbness of the tongue, saying that it felt very much swollen in the beginning of the disease, and that she knew the spasms to be approaching as the numbness began at the root and extended to the point, and then the spasms occurred. On the seventh day, there was an offensive evacuation from the bowels. The application of ice to the spine was continued till the evening of the fourth day, or for twelve hours after the first relief was observed. On the fifth day, a blister was applied to the spine on account of pains. The use of muriate of morphia was renewed as occasion seemed to require; and the bowels were kept free by means of purgatives and enemata; the only other remedy employed was nitric ether, when the morphia began to disagree. Wine was given freely from the evening of the fourth day. About the eleventh day, there was some threatening of a relapse, which was easily arrested.—Abridged from the *Philadelphia Medical Examiner, and Dublin Medical Press*, July 22d, 1846.

In our abridgement of the above case, we have omitted, we think, no material circumstance. We consider it one of much interest. Yet we cannot agree with Dr. M'Girr, that it is an unequivocal case of traumatic tetanus. We think it bears indisputable marks of being a case of mimosis, or one of that form of hysteria which puts on the aspect of tetanus. It is beyond question that the tonic spasm in hysteria may be just as complete and severe to appearance as in true tetanus, with this difference, that the spurious tetanus is not known to prove fatal, as so commonly happens in the other, especially when the result of an injury; and it is equally certain, that one fertile source of the reputation of many insufficient remedies proposed for tetanus, has been the confounding of the spurious with the true disease. It is a mistake, however, which, we confess, it is not easy to avoid; nor can any one be blamed for treating such a case as if it were true tetanus, since there are no sufficient means of diagnosis; nay, we should rather say that it is the duty of the medical attendant to treat every such doubtful case as if it were a case of true tetanus. But it is also his duty, when the result and whole history of the case are before him, to guard against imposing on himself and his brethren, by ascribing to some before unproved remedy the cure which was owing to little more than the spontaneous efforts of nature. We cannot, therefore, subscribe to our author's faith in the efficacy of ice to the spine in true tetanus, though it may have shortened the severity of the symptoms in the spurious case.

As regards conclusions to be drawn from the results of treatment, it is to be remembered that the tonic spasm occurring in a female, without the application of a cause of acknowledged potency, is, "prima facia," doubtfully a case of true tetanus, and as respects the case before us, there are certain symptoms which to our minds, converts this doubt into a certainty of its spurious nature. In the first place, the breaking of the tooth

took place when the patient, who is described as young and plethoric, had hardly recovered from the menstrual state; again, menstruation recurred before the attack subsided, and complete freedom from the symptoms was not obtained till the menstruation ceased; and it should, perhaps, be added, that for a short time after this cessation, there was a slight tendency to a relapse of the disease. Our author says, "The loss of sight was something that I had never read of as occurring in this disease." Yet if it had been suggested to him that the disease was nothing else but hysteria, we feel certain that he would not have been able to make that observation; temporary blindness, indeed, seems to be a not uncommon accompaniment of hysteric trismus. Though we feel convinced, that not only this case, but that many of the cases of the tonic spasm reported to have been cured by the outward application of cold, as by immersion in water, were really cases of spurious tetanus—yet we should be far from dissuading any one from giving a fair trial to the bags of ice when an opportunity offers.

*Monthly Journal of Medical Science, Sept.* 1846, *p.* 221.

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13.—TRAUMATIC TETANUS, RECOVERY.—By T. M. Greenhow, Esq., Newcastle.

[Any case of this generally fatal disease, *successfully* treated deserves a special record. It was taken to the Newcastle Infirmary under T. M. Greenhow, Esq., and is reported by Mr. C. J. Gibb.

In the earlier stage, calomel and opium carried to ptyalism nearly removed the symptoms; not so, however, in the more advanced stage, and from the success which frequently results from the use of opium and tartarised antimony, a trial was made, which produced a most tranquilizing effect, causing sleep, the relief of spasms, and the general soothing of the system. The patient first felt his jaw stiff on the 10th, and a drop of croton oil was given.

13th. The jaw could only be opened so as to allow the tongue to be seen, and he could not masticate; twitching pains of the neck and at the epigastrium, on coughing, or a deep inspiration.

19th. Jaw more locked, opisthotonos, and occasional spasms of the neck and back: gums tender from the calomel given.

23d. Much improved; head quite free, and jaw opens more easily.]

26th. Much worse; jaw can scarcely be opened at all; swallows after many attempts with great difficulty; breathing much oppressed by frequent spasms, which threaten suffocation and cause extreme pain; head and back permanently arched; was resting on the occiput and heels during the night; bowels free; urine again covered by an oily pellicle, on standing a short time. To take half a grain of tartarised antimony, with one of opium, and three of calomel, every three hours, having a double dose every night, and an enema in the morning.

27th. Exceedingly ill; frequent opisthotonos and paroxysms of dyspnœa, threatening suffocation; great pain at epigastrium; unable to swallow occasionally; abdomen like a board; bowels confined; mouth continues sore; pulse near 100. To continue and have purging enemata.

29th. Easier; opisthotonos greatly gone, and spasmodic attacks of dyspnœa only slight; swallows pretty well; jaw almost closed; bowels free; urine copious, clear, and devoid of the pellicle; motions dark and offensive.

31st. Doing exceedingly well; almost free from spasms and pain; swallows well; mouth very sore; urine loaded with phosphates. To go on with the powder without the calomel.

June 4th. Able to protrude the tongue fully; no spasms nor pain; and indeed very little complaint. The union of the fractures is greatly dissolved, and the bones are rather bent from the violent muscular spasms. To take

the powders night and morning, have good diet, and a dose of castor oil when necessary.

8th. Walking about the wards; jaw a little stiff and cramped in its movements yet, and the abdomen rather hard, but no other complaints; urine continues to throw down vast quantities of phosphates.

15th. All tetanic symptoms gone; feels pretty strong, and arms are becoming firm.

25th. Dismissed cured.

*Provincial Medical and Surgical Journal, Sept.* 2; 1846, *p.* 416.

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14.—ELECTRO MAGNETIC CURRENTS IN THE TREATMENT OF PARALYSIS.—By Dr. Golding Bird, F.R.S., &c.

We are indebted to the researches of our illustrious countryman, Dr. Faraday, for almost every fact connected with the science of induced electricity. It is now well known, that when an electric current of weak tension traverses a wire, it disturbs the equilibrium of the electric matter naturally existing in any conducting body held parallel to it. A momentary current of induced electricity of high tension is thus developed in the body, but no further phenomena are developed until the primary current ceases to traverse the wire. At the instant this stops, the electric equilibrium is restored in the conducting body, this being also accompanied by a momentary current of high tension. These two induced currents move in opposite directions, and may be detected by their producing the phenomena of light and heat, as well as chemical and physiological effects. Now, it is also known, that whenever an electric current traverses a conductor placed at right angles to the long axis of a bar of soft iron, it induces in the latter, magnetic phenomena of high power, which vanish the instant the electric current ceases to traverse the conductor. A train of reasoning flowing from this fact, has led to the belief, that in all permanent magnets, the physical phenomena of polarity, attraction, &c., are owing to myriads of molecular electric currents traversing the bar of metal in a direction at right angles to its long axis. Electricity thus inducing magnetism, in accordance with the well-known law of "action and reaction being equal and contrary," magnetism will induce electricity whenever a magnetic bar is moved across a conducting body. On these facts is based the construction of all varieties of electro-magnetic machines, and we are thus enabled, without trouble, to excite at pleasure currents of electricity of high tension, infinitely more potent than could be obtained by the use of the large and cumbrous galvanic batteries, at a great expense of money and time, as well as comfort, from the noxious gases evolved during their excitation.

[Dr. Golding Bird was the first to describe an instrument in the Philosophical Magazine, of self-moving power in order to make and rapidly break the battery contact—a very ingenious and decidedly the best, has been constructed by a well-known philosophical instrument maker.* It consists of a vibrating bar of brass, contact being made and broken with platina points. Dr. Bird describes the diseases of the nervous system in which this agent has been made use of by him, and arranges the varieties of paralysis thus:]

1. Cases of partial paralysis, resulting from congestion or other cerebral mischief, admitting of successful treatment. The congestion or effusion is removed, but a more or less palsied state of some part of the body remains.—Cases of this kind are common enough; and although the paralysis in general slowly disappears with the cause of the cerebral disorder, still the axiom of "sublata causa, tollitus effectus," does not always apply. Every now and then, although the blow has ceased, the bruise (if the expression be permitted) remains. Time, friction, change of air, restoration

* Mr. Neeves, working philosophical instrument maker, Broad-street, St. Giles'.

of the general health, strychnia, &c., will, after all, succeed; but when with improved general health, the stimulus of the electro-magnetic current be employed, success is much more general and certain. All that is required here, is to apply one of the conductors covered with wet linen, over the trunk of the largest nerve of the part affected, and to pass the other, similarly covered with linen, over the region of the palsied muscle, so as to keep them actively contracting for some minutes. In recent cases, a single application will often succeed; in more chronic ones, the remedy may be continued for weeks, until the paralysis disappears. One of the first cases in which I used this remedy occurred, about nine years ago, in a gentleman holding a prominent position at the bar. I saw him with Mr. Freeman, of Spring Gardens, under whose care he was. This gentleman had palsy of the left side of the face, the relic of an hemiplegic attack following cerebral congestion, the result of intense study and anxiety. His cerebral disease had been cured, his general health restored, but the paralysed nerves of the face alone refused to resume their functions. The electro-magnetic current was applied daily, the patient's footman being the "medical electrician," and in a few weeks he quite recovered.

2. Paralysis of muscles supplied by the portio dura, following exposure to cold.—This form of local paralysis, independent of cerebral mischief, generally yields readily to treatment. Cases, however, occur, in which the nerve remains inactive, and the patient walks about for a long time with a distorted face. The electro-magnetic current is here of great value. I have seen many cases of this kind; one to which I was recently called resulted from exposure of the left cheek of a lady for some hours to a current of air from a broken window. She recovered readily from the accompanying bronchitis, but was left with her features distorted, being drawn to the right side. I at once suggested the current from the apparatus; her maid-servant was the operator, and cured her mistress in a week.

3. Local paralysis involving the whole or part of a limb from exposure to cold.—This variety resembles the last, and is probably of a rheumatic character; although, it must be confessed, it is often a difficult task to define the line separating rheumatic from some paralytic affections. The following is one of many I have seen:—The actuary of one of the large assurance offices consulted me, with nearly complete paralysis of motion of the left arm, sensation being pretty perfect: no pain whatever in moving the limb. During a cold winter, he had been in the habit of sitting at his desk, with the right side of his body roasting by a large fire, while the left was chilled by blasts of cold air from a frequently opened door. Gradually pain and stiffness appeared in the left arm, but no swelling. The pain gradually vanished, and the limb was left palsied. Other remedies proving useless, the electro-magnetic current was applied. I ordered a conductor to be applied over the lower cervical spinal region, to influence the origin of the axillary plexus, the other being passed down the arm. After a few weeks, he quite recovered. This gentleman was his own operator: he fastened the spinal conductor in its place by his neckcloth, and thus had the right hand at liberty to apply the other.

4. Paralysis affecting one side of the body, or a single limb, the result of exhaustion.—These cases are not unfrequent, and before their nature was understood, they used to be fearfully mismanaged, the paralysis being looked to, rather than the cause producing it, and depletion and mercury employed, when nutritious food and stimulants were really indicated. It often happens that these cases are directly traceable to an obvious cause, and then the diagnosis becomes easy. The insidious exhaustion and enervation produced by excessive lactation is a not unfrequent cause. I saw a well-marked case of this kind, five or six years ago, in a patient under the care of a most excellent and talented practitioner, Mr. Pretty, now residing in Mornington-road. This lady, a person of weak frame and strumous diathesis, had become exhausted by nursing her third infant, and the left arm

became gradually palsied as far as motion was concerned. A generous diet, weaning the child, and the electro-magnetic current, were ordered. I had lost sight of this lady until a few days ago, when I was called to see her sinking from phthisis. I then learned that, under the treatment suggested, the paralysis had soon disappeared.

Paralysis from enervation has occasionally followed sudden loss of blood at flooding labours. I have witnessed complete hemiplegia as the result. A case of this kind I once saw with my friend, Mr. Law, of Finsbury, who had most properly treated the poor lady with generous diet and iron, under which she did well. When under this treatment, in spite of the restoration of the general health, paralysis remains, the electro-magnetic stimulus promises, from what I have seen, to be of much service.

5. Cases of Rheumatic Paraplegia.—To this category I refer cases of rheumatism affecting chiefly the lower extremities, the pain and acute action disappearing, while more or less complete paraplegia remains. In these cases, I have seen the greatest benefit result from electro-magnetism, as well as from ordinary electricity. I have witnessed so many of these cases, thus treated, do well, that I can speak with great confidence of its influence. One case will suffice as an example. A man came last summer into Luke's ward, at Guy's under my care, with complete paralysis of motion of the lower extremities. He was totally unable to move his feet or knees, and was carried into the ward. This state of things had followed the dashing of ice-cold water on his legs and thighs, while sweating profusely. But little medicine was ordered for this man, and in less than three weeks, he, under the use of electro-magnetism, walked about the ward, aided by one crutch and his stick. In these cases, one conductor should be firmly pressed against the sacrum, while the other is placed in a basin of salt-and-water, in which the feet are immersed.

6. Paraplegia the Result of Enervation?—I am not quite sure of the pathological correctness of the title I have assumed. By it, however, I understand a series of cases in which paraplegia, both of motion and sensation, results from excessive fatigue, from sitting for weeks and months together, during the greater part of twenty-four hours, with the spine somewhat bent. I knew of one case in which a distinguished physician actually became thus palsied, after assiduously devoting his time to the study of certain phenomena by the microscope, in doing which he, for hours together, used to lean over the instrument. There is, however, another cause, unhappily too rife, of these cases, the miserable result of the utilitarian dogma which makes human labour a marketable commodity, without any regard to the conservation of health. I may perhaps startle some by announcing the fact, that I have, in several instances, seen more or less complete paraplegia among a class of labourers of the most oppressed and most unprotected character. I refer to the needle-women of the metropolis—a class of girls and women, who, to earn enough of the wretched pittance they receive from the agents who employ them, to procure the commonest necessaries of life, are often compelled to work for fourteen, sixteen, eighteen hours, or even sometimes longer in the twenty-four hours. They toil on, indeed, at the needle, until the sight fails as they drop asleep; waking, after snatching a short slumber, to resume their work. These poor creatures receive from three-halfpence to four-pence halfpenny for making a shirt (for the latter price producing such as is worn by respectable mechanics and others). They are unable to procure proper food, and are often driven to intemperance to forget their miseries, or to prostitution to add to their wretched income. No wonder that they become exhausted, enervated, bloodless; and paraplegia is not unfrequently the result. I had under my care, in the hospital, this last summer, a young woman who had once moved in a respectable sphere. She was quite paraplegic. She had been exhausted by working in the way I have described, and declared to me that, except dozing in her chair, she had often not slept for two nights together. She first felt vague pains in

the toes, then in the knees; rigidity came on; and ultimately she became as I saw her, the lower half of her body being as powerless as if made of marble.

In many of these cases no organic lesion exists; and by due nourishment, rest in the recumbent position, iron or zinc, and the subsequent application of the electro-magnetic stimulus, recovery generally takes place. These cases are little known, and will continue (we must fear) to occur, so long as the labour of the friendless and dependent female is regarded with no more feelings of sympathy or humanity than the amount of duty performed by a steam-engine or any other machine.

In thus advocating the electro-magnetic current as an important and most valuable excitant of paralyzed muscles, I must still acknowledge that it is anything but a universally successful remedy. In the great majority of forms of palsy above described, it is indubitably, in some, the actual curative agent; in all, it expedites and aids the cure; in none is it injurious. As a general rule, I think it will be found cœteris paribus to act most effectually in proportion to the acuteness of the case. In chronic paralysis, we must recollect that any new tissue deposited during, perhaps many months, or longer, although organised like the healthy structure, and provided with its due supply of nerves, is still composed of fibres which have never obeyed the influence of the will—have never moved at the volition of the patient. This I believe to be the reason of our not at once rousing a long paralyzed muscle into action. We can here only expect to succeed by submitting the paralyzed part for a long period to the influence of the remedy. I cannot conclude without urging upon the profession the impropriety and mischief of using electricity in some cases merely because paralysis exists. In true spinal paralysis depending upon organic lesion, the electro-magnetic current often does mischief, especially where there is subacute inflammation, or a highly irritable state of the spinal marrow—a state of things shown, among other symptoms, by the involuntary and unconscious starting of the legs. In all such cases, the remedy does no good, and in some it does great harm, the effect of its local irritation, when applied to the legs, appearing to be reflected to the spine, and greatly increasing the patient's sufferings. *Lancet, June* 13, 1846, *p.* 649.

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15.—ANÆSTHESIA TREATED BY ELECTRO-MAGNETISM.—By J. C. Christophers, Esq., London.

[This patient had been labouring under a slight leucorrhœal discharge, for which she had been directed to use a cold hip bath every morning. Every time she left the bath there was a loss of feeling in the skin, which gradually subsided in about half an hour; after the twelfth bath, however, it became permanent. She was in good health when Mr. C. was called to her, and had taken a walk that day; she had no feeling from her toes upwards as far as the water had extended; she complained of not being able fully to evacuate the rectum, and of the urine slowly dribbling away. The temperature of the parts was below that of the rest of the body; numerous remedies were resorted to without benefit, when the application of electro-galvanism was resolved upon. Mr. C. observes:]

An improvement was observed after the second application. The rectum and bladder were the first to regain their normal condition, the thighs and legs next, the feet and abdomen last. It was interesting to note, during the progress of cure, that on those days when the wind was in the east, and the atmosphere cold, the legs and feet were always worse if the patient left her warm drawing-room and went abroad—a circumstance pointing to the cause of the malady. Electro-magnetism was used on twenty-two occasions, from an hour and a half to two hours at each sitting. It was most interesting to watch the gradual return of sensation under its influence.

The method I adopted was—first to pass a current down the whole spine for half an hour; then from each side of the sacrum to each foot for half an hour; then from the spine to the abdomen for the same period. At the end of the twenty-two days the patient was quite restored; no trace of the malady remained. *Lancet, Aug.* 8, 1846, *p.* 144.

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16.—BRUCINE IN OBSTINATE PARALYSIS.

Brucine is substituted by M. Bricheteau for strychnine, in the treatment of obstinate paralysis remaining after an attack of apoplexy, with equally good effect, and with the additional advantage over strychnine of the being able to employ it in larges doses without danger of fatal accidents. A man was received into hospital with hemiplegia of the left side, sensible alteration of the intellectual faculties, and almost complete deafness, the sequelæ of a former attack of apoplexy. On the day of his admission he was treated by brucine in the dose of a centigramme, an infusion of arnica was prescribed for drink. The first day the patient perceived nothing particular; the next day he took two centigrammes, increasing the quantity by one centigramme daily, until the effect of the medicine became evident. When carried to the dose of ten centigrammes, the following effects were perceived:—One hour after taking the brucine pills, the patient experienced a general heat, and particularly in the thighs and hams; this heat was attended by a general susceptibility. To these first symptoms succeeded regular convulsions, returning at intervals, and causing strong muscular contractions; at the same time there was redness of the face and headache, the patient nevertheless preserving his reason. The convulsions lasted about an hour, but there was no trismus; they were followed by lassitude in all the limbs, and an irresistible desire to sleep. This patient took the brucine for three months and a half or nearly four months, at the end of which time he was able to walk without support.—*Gazette Medicale de Paris.*
*Prov. Med. and Surg. Journal, July* 22, 1846, *p.* 341.

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17.—PARALYSIS OF THE HANDS FROM THE USE OF CRUTCHES.

A woman has been admitted into the Hotel Dieu, under the care of M. Guerard, with paralysis of both fore-arms and of the fingers of both hands, resulting apparently from pressure on the axillary nerves by the use of crutches for fourteen days. The paralysis began by a feeling of numbness. There was complete loss of sensation and of the power of motion in the affected parts, on admission; but by rest and the employment of blisters and strychnia for a few days, the fingers had regained a certain amount of their power. The case is still under treatment.—*Gaz. des Hopitaux.* *Med. Gaz., June* 26, 1846, *p.* 1125.

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18.—CASE OF SCIATICA TREATED WITH MOXAS.—By Dr. A. T. Thomson.

[The patient, a female, forty-eight years of age, was an inmate of University College Hospital, admitted April 23, 1846. A month before admission she was seized with pain in the back, right shoulder, and the left hip and groin; there was no accompanying fever. A week ago, having got wet, the pain became much worse, and of a paroxysmal character; the pain at the time of her admission was much more severe during the night; her general health pretty good, no pain along the course of the sciatic nerve nor spine. She was ordered a mixture containing tincture of guaiacum and tincture of aconite. On the 2nd of May the pain was still severe;

the dose of guaiacum to be increased. On the 11th, directed a long aconite plaister to be placed over the seat of pain: this was followed next day with improvement in every respect. On the 14th the pain returned as severe as ever, but was not worse at nights; she was cupped over the seat of pain, and two grains of calomel and one grain of opium were given after the operation; she was ordered a mixture containing vin. colchicum and tincture of aconite. On the 19th, the pain again returned in the course of the sciatic nerve: six moxas were applied to the part, and the medicine continued. On the 21st she was reported as much improved, and since then the reports are all favourable.]

Dr. Thomson observed, that the nature of sciatica was not yet fully agreed upon, although it had been long agitated by different authors. Is it rheumatism? Dr. Barlow (a very good authority) and other writers regard it as having a greater affinity to neuralgia than to rheumatism. If we argued from the case before us, and others of a similar kind, the pains in the shoulder, the back, &c., would induce us to class it with rheumatism. In general, the pain was preceded by constitutional fever; and in sciatica this was very often the case, although the previous fever was frequently overlooked. Rheumatism most commonly attacks muscular and membranous parts, and in sciatica the inflammation is most probably seated in the theca of the nerve, not in the nerve itself. Again, the patient had suffered several times from rheumatism, and there evidently existed a predisposition to the disease. In sciatica the local inflammation is less likely to move, or, as the term is, undergo metastasis; and the febrile symptoms are necessarily less obvious than in general acute rheumatism.

A question here presented itself, if we maintain the rheumatic character of sciatica, what are the causes of rheumatic inflammation? In reply, we should say, cold and damp, currents of air when the body is warm, &c. But if two persons were exposed to the same exciting causes, and one only got rheumatism, whilst the other got pleurisy, there must have been some predisposing state which leads to the setting up of rheumatic inflammation. This is stated to be plethora; but when that is the case, pneumonia, or pleurisy, or other inflammations, are more likely to occur than rheumatism, and still more than sciatica. Dr. Thomson was therefore of opinion that when rheumatism makes its attack there is not merely plethora, but a high susceptibility of the nervous system. Hence the inflammation, whatever tissue it affects, is accompanied by acute pain.

Leaving theory, let us look to the influence and propriety of the treatment in this case, in reference to the disease in other instances. As the pulse and general symptoms did not indicate febrile excitement, general bleeding and antiphlogistic measures were not deemed necessary; on the contrary, the indications to be fulfilled were—1st. to render the system less sensitive by giving tone; 2nd. to subdue topical inflammation. The first indication was here the more necessary, from the neuralgic character of the pains, and their periodicity: hence guaiacum was ordered as a warm purgative, and also to act on the skin, and afterwards the disulphate of quinine. The aconite plaister appeared to relieve the pain for a short time, but since it soon returned with increased tenderness, and the small pulse was no indication that active local inflammation was not present, she was cupped, and as re-action had taken place the tonic was discontinued, and colchicum substituted; as, however, the pain still continued, the object was to subdue the local inflammation either by topical bleeding, sedatives, counter-irritants, or the more powerful influence of moxas. Topical bleeding, with the administration of colchicum or aconite; blisters dressed with morphia, especially if an eruption appeared, acupuncture needles, counter-irritations, &c., would often relieve temporarily; but if the disease had been of long standing the benefit was seldom permanent. The pain from the application of the moxas was not nearly so severe as was generally supposed; a small number would cause almost as much pain as six

or eight, and was not at all to be depended upon. The Chinese, who chiefly employed this remedy, generally applied six or eight on either side of the spine, in cases of severe lumbago. Moxas acted by giving an intense local stimulus to the capillaries of the part; but this was not confined to the surface; it extended to the deeper structures, and by equalizing the circulation in the theca, removed the pressure from the nerve. It was, therefore, erroneous to suppose that the benefit was derived from the discharge set up, for this was very small, and, indeed, the improvement was generally most marked long before the sloughs had separated. Dr. Thomson considered that this remedy was too much neglected by British practitioners; he had used it in numerous instances, and generally found the cure effected permanently.

The best moxas are prepared by dipping a piece of bibulous paper in a solution of diacetate of lead, drying it, and rolling it up in the form of a cylinder. It burns well and steadily, leaving an ash of yellow oxide of lead.

*Medical Gazette, July* 17, 1846, *p.* 126.

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19.—ENDERMIC APPLICATION OF MORPHIA IN NEURALGIC PAINS.—By Dr. White, of Newcastle.—(Reported by Mr. Charles J. Gibb.)

[The first of these cases, treated by Dr. White, was a tall stout keelman, 57 years of age. He had a severe aching pain in the left hip and posterior part of the thigh; the pain was aggravated at night, assuming a lancinating character, darting down to the foot; there was no fever; bowels regular. He was ordered]

To have three grains each of blue pill, aloes, and acetous extract of colchicum, with five grains of Dover's powder, every night; five grains of the iodide of potassium thrice a day, and a small blister to the most painful part of the buttock, after which the abraded skin to be sprinkled over with a grain of the acetate of morphia every morning.

[In 18 days this patient was dismissed cured. The next case is that of a joiner, 56 years of age. He complained of stinging pains, proceeding from the right buttock down the leg to the foot; the pain was easier during the night; general health good, urine healthy, bowels regular, no thirst.—He had a similar attack nine years ago, and was cured in the same hospital. He was ordered two grains of blue pill and four of aloes every night, and the mixture and volatile tinct. of guaiacum thrice a-day, and a small blister to the hip, dressed every morning with a grain of morphia.—In a month's time he was discharged cured. In another case, occurring in Dr. White's hospital practice, the patient laboured under severe aching pain and soreness of the whole skull, not affected by outward circumstances. He had a blister applied to each temple, and the abraded surface sprinkled over with half a grain of morphia every morning; in a week's time the pain was entirely gone.]

This mode of treating those pains which appear to depend principally upon nervous irritation, or it may be, chronic inflammation, and are confined in their extent, has been extensively employed here, and in no cases has it been attended with any disagreeable effect; but, on the contrary, with the most suprising benefit in many, or, I might say, in most of those patients, who, from their condition, seemed to be suitable for its application. The pain is generally soon relieved, and a comfortable feeling of ease, with sometimes a little drowsiness, is experienced. In fact, in sciatica, or, indeed, in any case where the pain can be distinctly traced along the nerve, this plan is often the only one that affords even partial relief. The application must be used as near the trunk of the nerve as possible, particularly when the pain most nearly centralizes. It sometimes requires to be reapplied nearer and nearer the terminating branches, as the pain is gradually expelled. Hence in sciatica, the buttock first, then the knee, and lastly, the

foot, sometimes in succession, require the vesication, and subsequent sprinkling of the morphia. It is quite certain that this treatment has entirely succeeded when leeches, blisters, moxas, belladonna externally, and arsenic, iron, iodine, turpentine, and guaiacum have entirely failed. Dr. White has had frequent opportunities of testing its power over pains situated about the upper parts of the body, and does not consider that the locality, as regards the contiguity of any of the most sensitive organs, or, indeed, of the sensorium itself, has much, or any, influence in heightening the constitutional effects of the drug, but he does, nevertheless, watch it then with great care, and uses the application, in such cases, with somewhat less freedom than when, by its narcotic touch, he endeavors to dispel a sciatic pain. The secretions and states of the different viscera are, of course, during its use, to be carefully examined and increased, or corrected when faulty. To Dr. Greenhow, of North Shields, I believe, the merit is due of first applying morphia endermically over the region of the stomach for pains in that viscus. *Lancet, June* 20, 1846, *p.* 673.

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20.—COFFEE AS A REMEDY FOR NEURALGIA.

It is stated that a female under the care M. Piorry, had, after parturition, being attacked with a neuralgic affection of the frontal branch of the fifth pair of nerves, which, after resisting a number of the ordinary remedies, yielded completely to a continued use for many days of a very concentrated decoction of coffee. Another case also is mentioned in which the success of this remedy was generally marked. A woman affected with the same form of neuralgia, which had been unavailingly treated with the valerianate of zinc and quinine, became cured by combining the use of strong coffee with the above remedies. The therapeutic effects of this drug were well marked in her; a draught of a very strong decotion of it at the commencement of a paroxysm of pain being quite sufficient to prevent its continuance. —*Gazette des Hospitaux.* *Med. Gaz., June* 5, 1846, *p.* 1016.

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21.—TREATMENT OF CHOREA.—By Dr. Bellingham, Dublin.

[Remedies quite opposite in their nature have enjoyed a curative reputation in the treatment of chorea, but perhaps a good deal should be ascribed to the vis medicatrix in these cases, as the disease, after exciting for a time, has a tendency gradually to subside. Purgatives, as *curative* of chorea, are now abandoned, although they are occasionally used with marked benefit, by removing morbid secretions or fœcal accumulations. The remedies now considered curative of chorea belong to the class of tonics, and those derived from the mineral kingdom, as iron. Dr. Bellingham has given oxide of zinc, and he speaks very favourably of it; he says,]

I was induced to try this medicine in chorea, partly because I had occasionally found the preparation of iron to disagree (occasioning headache, hot skin, foul tongue, and constipation), and partly because the oxide of zinc formerly had some repute as a tonic in this and some other diseases, though of late years it had almost completely fallen into disuse, having been superseded by newer or more fashionable remedies. The largest dose of the oxide of zinc which I have found necessary is twelve grains; in general, smaller doses were employed. In a few cases it occasioned nausea or pain referred to the epigastric region; it was then given in combination with an aromatic; more frequently it acted as a purgative, and it was found necessary to combine it with an astringent, as prepared chalk, &c.: the latter effect is not generally supposed to be produced by the oxide of zinc, but I have witnessed it on many occasions; in some cases indeed the intermission of the medicine for a few days was necessary.

[Dr. Bellingham found the shower bath and change of residence of decided advantage in the treatment of these cases; he treated a very severe case, at first, with carbonate of iron, and afterwards, with oxide of zinc. The patient could neither sit, stand, nor speak; the upper and lower extremities, on both sides, were in constant motion; these motions were diminished, but did not cease during sleep: the bowels were cleared out, and a leech applied to the nostrils, and the following treatment was adopted.]

℞. Sub. carb. ferri sacch. Bicarbonatis sodæ aa. grana duo. Pulveris aromat. granum. Ft. pulvis ter in die sumendus.

8th. Involuntary motions continue uninterruptedly during the day, but subside when asleep; sleeps well now. A tepid shower bath daily to be gradually used cold.

20th. The medicine began to disagree with the patient, and was consequently discontinued.

℞. Oxidi zinci. Sacchari albi aa. grana iij. Ft. pulvis ter in die sumendus.

Soon afterwards the dose was increased to five grains three times a day; it produced no effect upon the bowels; the little patient was soon able to sit up, then to stand and to speak, while the involuntary motions diminished considerably.

February 12th. The patient is now able to walk and speak; the countenance is cheerful and healthy-looking; the motions in the arms are slight, and she can hold objects in her hands. The medicine produces no sensible effect.

26th. She left the hospital this day perfectly well, having continued to take the medicine regularly; she had grown strong and looked healthy.

*Dublin Med. Press, July* 29, 1846, *p.* 66.

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22.—CASE OF HYSTERIA.—By Dr. Todd.

[At a meeting of the South London Medical Society, in April last, Dr. Todd related the following case of hysteria: A young woman 22 years of age, was admitted into hospital; she had hectic flush and a decidedly hysterical appearance; catamenia appeared at 17, but did not recur for 18 months; she had been accustomed two years previously to vicarious periodical discharges of blood from the stomach; also this occurred between the first and second catamenial flow. The catamenia appeared a third time, when hooping cough came, which confined her to bed for 15 weeks, during which time there was no return of the menstrual discharge, and when this did occur, it was at long intervals and scanty. Five months before admission, she was suddenly seized with spasms about the neck of the bladder, and swelling of the pudenda, with retention of urine. On admission, her respiration varied from 90 to 120 in a minute, and the pulse 100 to 120; after every twentieth respiration a slight pause ensued. During sleep, the respiration fell to 18, and the pulse to 60, and immediately on awaking the pulse rose to 80, and the respiration to 80, gradually increasing; she never suffered from dyspnœa. At first, relief was afforded by evacuating the large intestines, by means of turpentine and assafœtida; she passed her urine voluntarily two days after. The cold dash was used, and the use of the catheter prohibited. She had tonics, good diet, and purgatives. At one of her catamenial periods the breathing rose, aphonia took place, there was spasm of the eyelids, and other hysterical symptoms; but when the flow came on she was soon relieved, and gradually improved. On this case,]

The author remarked, first, on the remarkable cessation of the quick breathing during sleep; a fact identical with what takes places in chorea, in which the convulsive movements are instantly relaxed when sleep takes possession of the brain. 2ndly. On the value of an invigorating and tonic plan of treatment; as in all these cases the secretions are deficient or faulty, espe-

cially the uterine and digestive. He also dwelt especially on the necessity of attending to the habits of the patient, and trusted more to a system of discipline than one of mere drugs. Valerian, ammonia, assafœtida, and turpentine—all of which tend to a similar object—namely, stimulation of the nervous system, were those alone in which he had any confidence: and after the severe stage of the disease, quinine, iron, zinc, or the vegetable tonics, especially the chirayita, were of benefit; all, however, were insignificant when compared with moral and physical discipline, the shower bath, cold dash, good diet, and exercise.

He was opposed to general or local bleeding, being of opinion that the local pains, so frequently occurring in hysterical persons, although benefited, for a time, by a few leeches, speedily return, and in an aggravated character. Purging or moderate sweating, which might eliminate morbid matters from the circulation, were valuable adjuncts to the treatment, when kept within due bounds.

[Mr. Hilton remarked on the excitement of the respiration, and then adverted to the exhibition of stimulants during this excited state. Dr. Todd]

Did not consider it an excited state of the system, in the strict sense of the word; for, although the respiration was quick, there was no abnormal condition of the respiratory functions, or of the nervous centres which supplied them; his views being that, on a post mortem examination, no lesion of structure would have been discoverable, and the symptoms were induced by an unnatural nutrition of the nervous centres, from a deteriorated condition of the blood; it did not consist in an exaltation, being only an acceleration of action, with a diminution of power, and want of due regulation (as instanced in delirium), and was better treated by stimulating than depressing remedies.

[Dr. Lever observed that, when other remedies failed, the turpentine enema and the topical application of cold water, would often succeed in producing voluntary evacuation of the bladder. Dr. Munk bore testimony to the efficacy of pil. galvan. co.; when the large intestines were disordered, as shown by pain in the left side. Dr. Lever said valerian was so often of bad quality, it could not be depended upon; the valerianate of zinc was very serviceable. *Med. Gaz., May*, 15, 1846, *p.* 869.

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## 23.—THE SHAPE OF THE EXTERNAL EAR IN RELATION TO MENTAL DISEASE.

[Dr. Conolly makes the following very interesting remarks on this subject:—]

M. Foville has made curious and, I believe, original observations on the shape of the ear in different forms of insanity, and has noticed an analogy or resemblance between the development of different portions of this organ and the brain of the patient. Of these views he was so obliging as to give me some explanation, illustrated by an extemporaneous diagram, and afterward by corroborative examples. In some of the cases of dementia, or of the lowest degree of intelligence, the flatness and the defective form of the helix, anti-helix, and tragus, and the disproportionate enlargement and pendulosity of the lobe of the ear, and rounded clumsy shape of the outer edge of the auricle, were very striking. Subsequent observations have led me to believe these views to be exact as well as curious, and they exemplify the abundance of external evidence available to the physician in relation to internal disorder.

In support of the view here proposed, he relates the following anecdote:

Not very long ago, M. Foville was called upon by an intelligent and philanthropic person, who appeared to take much interest in the management of lunatic asylums; and he was greatly struck with a conformation of ears

in this gentleman which he had never previously observed, except in cases of mental irregularity or disorder. I happen myself to know that the individual who was the subject of this observation has had several attacks of insanity, and although now at large, and exhibiting considerable mental activity, has repeatedly been in confinement; circumstances of which M. Foville had no knowledge when he remarked what seemed to him to be an anomalous peculiarity.—*British and Foreign Review.*

*Lancet, May* 30, 1846, *p.* 605.

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24.—INJURIOUS INFLUENCE OF TOBACCO IN INSANITY.—By Dr. Woodward.

[Dr. Woodward's experience is quite at variance with that of the physicians to our asylums. It must be questioned, however, whether depriving some patients of the enjoyment of this luxury may not lead to a good deal of irritation, and thus aggravate the disease. Dr. W. observes,]

Alcohol is not the only narcotic which thus affects the brain and nervous system. Opium produces delirium tremens, and probably insanity. Tobacco is a powerful narcotic agent, and its use is very deleterious to the nervous system, producing tremors, vertigo, faintness, palpitation of the heart, and other serious diseases. That tobacco certainly produces insanity I am not able positively to observe; but that it produces a predisposition to it I am fully confident. Its influence upon the brain and nervous system generally, is hardly less obvious than that of alcohol, and, if excessively used, is equally injurious. The young are particularly susceptible to the influence of these narcotics. If a young man becomes intemperate before he is twenty years of age, he rarely lives to thirty. If a young man uses tobacco while the system is greatly susceptible to its influence, he will not be likely to escape injurious effects, that will be developed sooner or later, and both diminish the enjoyments of life and shorten its period. In our experience in this hospital, tobacco, in all its forms, is injurious to the insane. It increases excitement of the nervous system in many cases, deranges the stomach and produces vertigo, tremors and stupor in others.

*Lancet, July* 11, 1846, *p.* 49.

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25.—CASE OF EPILEPSY IN THE HOSPITAL PRACTICE OF DR. WHITE OF NEWCASTLE.—(Reported by Mr. Charles J. Gibb.)

[The patient was a healthy looking seaman, 36 years of age. He had been subject to epileptic fits of an aggravated character, for the last 18 months: there were no premonitory signs of, and total insensibility during the fits, which lasted an indefinite period. He was subjected to a variety of treatment, the disease appearing of a functional character. He had contracted syphilis in his youth but had never suffered from secondary symptoms; some indications, however, coming on, he was ordered iodide of potass 3 grains three times a day, and the soreness of the mouth, which had previously been induced, to be kept up by blue pill. Under this treatment, the nocturnal pains and epileptic paroxysms disappeared together. Mr. Gibb, who reports this case, makes the following remarks.]

From the history of the affection, it was pretty evident that it arose from some functional disturbance, and not from any permanent organic irritation. He had had piles for a long time, which, having dried up of late, it was considered that that circumstance was the key to the case, and that by withdrawing a little blood at intervals, and increasing the secretions, taking particular care to evacuate the liver, the system would be relieved of the encumbrance which the closing of its drain or safety-valve had detained within it, and thus get quit of those fits which seemed to be the mere symp-

toms of that condition. This plan, however, failing, and the succeeding ones having had as little effect, it was considered expedient, on account of a few secondary syphilitic symptoms having appeared, to commence with the iodide of potassium, upon the supposition that the epilepsy might be but a symptom of the venereal taint; and its curative action, although so very striking, is not greater than that which it commonly exerts over the nodes (which might possibly have existed within the skull in this case), and over the excruciating nocturnal pains which form one link in the series of the terrible effects of syphilis. *Lancet, July* 25, 1846, *p.* 90.

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## ORGANS OF CIRCULATION.

26.—OBSERVATIONS ON CASES OF PERMANENTLY SLOW PULSE.—By Dr. Stokes.

[In the fourth volume of the Dublin Hospital Reports, Mr. Adams has recorded a case of permanently slow pulse, in which the patient suffered from repeated cerebral attacks (not followed by paralysis) of an apoplectic character. Dr. Stokes, and the subsequent writers on diseases of the heart, have not sufficiently directed their attention to this case. He publishes the following cases to elucidate a subject of which there is so little known.]

Case 1.—*Repeated pseudo-apoplectic attacks, not followed by paralysis: slow pulse with valvular murmur.*

Edmund Butler, aged sixty-eight, was admitted into the Meath Hospital, Feb. 9th, 1846. He stated that his health had been robust, until about three years ago, at which time he was suddenly seized with a fainting fit, in which he would have fallen if he had not been supported. This occurred several times during the day, and always left him without any unpleasant effects. Since that time he has never been free from these attacks for any considerable length of time, and has had, at least, fifty such seizures. The fits are very uncertain as to the period of their invasion, and very irregular as to their intensity, some being much milder and of shorter duration than others. They are induced by any circumstance tending to impede or oppress the heart's action, such as sudden exertion, distended stomach, or constipated bowels. There is little warning given of the approaching attack. He feels, he says, a lump first in the stomach, which passes up through the right side of the neck into the head, where it seems to explode and pass away with a loud noise resembling thunder, by which he is stupified. This is often accompanied by a fluttering sensation about the heart. He never was convulsed or frothed at the mouth during the fit, but has occasionally injured his tongue. The duration of the attack is seldom more than four or five minutes, and sometimes less; but during that time he is perfectly insensible. He never suffered unpleasant effects after the fits, nor had anything like paralysis. His last fit occurred about one month before admission. He has never heard it remarked that there was anything peculiar about his heart or pulse. At first he found that spirits was the best restorative or prophylactic, but latterly he has not used them, being "afraid to die with spirits in his belly."

On admission, he was haggard and emaciated, but seemed the wreck of what was once a fine, robust man. He lay generally in a half drowsy state, but when spoken to was perfectly lively and intelligent. What he sought admission into the hospital for was an injury he had sustained, by a fall, on the left shoulder; this, however, was of no consequence, and he soon recovered under the use of an anodyne liniment. He makes no complaint of his general health; his appetite is good, and he sleeps well; bowels regular, and, in fact, all the functions are in good order. He has, however, some cough, attended with a slight mucous expectoration. His intellectual powers are perfect. He complains of a feeling of chilliness over the body,

and is never warm except when close to the fire. This has long been the case; and he says that each day he gets a periodical chill, generally in the afternoon, which is followed by increased heat of the surface, but without sweating.

On percussion, the chest is universally resonant. The respiratory murmur loud, and combined, more especially posteriorly, with large mucous rales. The impulse of the heart is extremely slow, and of a dull, prolonged, heaving character, giving the idea of feeble as well as of slow action. The first sound is accompanied by a soft *bruit de soufflet*, which is prolonged until the commencement of the second sound, and is heard very distinctly up along the sternum, and even into the carotid arteries. The second sound is also imperfect, though very slightly so; the imperfection being much more evident after some beats than after others. Pulse twenty-eight in the minute, of a prolonged, sluggish character; the arteries pulsate visibly all over the body, but no *bruit* is audible in them. They appear to be in a state of permanent distension; the temporal arteries ramifying under the scalp, just as they are seen in a well-injected subject. All the other cavities and viscera appear to be in a perfectly healthy state. Urine, neither acid nor alkaline; of a light colour, clear; specific gravity 1010; and does not afford a precipitate with nitric acid. He was ordered four ounces of wine, and a liniment for the shoulder.

February 17th. The pulse has varied from twenty-eight to thirty in the minute. The cardiac murmurs continue unchanged; that with the first sound is plainly audible over the upper part of the thorax, but most evident along the course of the aorta.

21st. Pulse thirty. Cough quite gone. Has been complaining of a feeling of the "lump in the stomach" for several days, and was once threatened with the approach of a fit during the night; it passed off, however, without becoming a true attack.

23rd. An œdematous swelling has appeared behind the left ear, extending up the side of the head, slightly tender on pressure; no redness; has had no shiverings; tongue clean; bowels free. Pulse up to 36.

March 3rd. On the 24th of February the œdema had left the left side, and made its appearance on the right, from which it was dispersed on the following day by the application of poultices. The pulse fell to the usual range.

His aspect and general health are greatly improved since his admission. He gets up every day, and is much stronger. The shoulder is almost quite well. The pulse has continued at about 28 or 30. He says he has had two threatenings of fits since his admission, both occurring in bed, *and both warded off by a peculiar manœuvre: as soon as he perceives symptoms of the approaching attack, he directly turns on his hands and knees, keeping his head low, and by this means, he says, he often averts what otherwise would end in an attack.*

[On the readmission of this patient into the hospital three months afterwards, in addition to the other symptoms, there was a remarkable pulsation in the right jugular vein. In the next case, there was a similar condition of the heart, but no pseudo-apoplectic attacks. Dr. Stokes observes,]

The co-existence of aortic murmur with the symptoms of weakened heart in both of these cases is important, for if it should appear that this combination is one of frequent occurrence, we shall have less difficulty in recognising an obscure disease of the heart. There is no reason to believe that there is any necessary connexion between the weakened, or fatty state of the heart, and disease of the aorta or its valves; but that the combination is frequent appears probable from the following considerations:—

First—In the two cases which have now been given, we see the combination of slow pulse with aortic murmurs.

Secondly—In one of these, organic disease of the aorta was found on dissection.

Thirdly—In Mr. Adams' case the aortic valves were studded with specks of bone. The state of the aorta is not noticed; but the carotids and middle arteries of the dura mater presented bony depositions.

Fourthly—In a case published by Dr. Cheyne, in the second volume of the Dublin Hospital Reports, in which the heart had greatly degenerated into fat, the valves were sound, but the aorta was studded with atheromatous concretions.

Fifthly—Professor Law, in his original and important observations on the connexion between disease of the heart and brain, in the seventeenth volume of the Dublin Journal of Medical Science, gives an account of the appearances observed in examining the body of the Earl of K., and states that the pulse was remarkably infrequent, sometimes not exceeding twenty-five beats in the minute. The patient was subject to syncope. The examination was made in London, and no mention is made of the state of the muscular substance of the heart; but it was found that the semi-lunar valves of the aorta were thickened and partially ossified, so that they could not effectually have closed the orifice. The brain was extensively softened, and the ventricles distended with a limpid fluid, and the substance of the left hemisphere, both cortical and medullary, was so softened as to present an almost creamy consistence. The arteries at the base of the brain presented opaque yellow depositions. This case was, in all probability, an example, if not of fatty degeneration, at least, of a weakened state of the ventricle. It is another example of the combination of a singularly slow pulse, tendency to syncope, and disease of the aortic valve.

[Mr. Adams has communicated a case to Dr. Stokes, in which there was slow pulse with lesion of the aortic orifice and softening of the left ventricle; and Dr. S. observes that he has lately seen another case, in which the pulse was under 30; there were repeated pseudo-apopletic attacks, and distinct valvular murmur with the first sound of the heart. Dr. Stokes adds,]

The preceding observations go to prove that the combination of the permanently slow pulse with a diseased condition of the aortic opening, is not uncommon. We owe to Dr. Corrigan, the important practical observation, that in cases of permanent patency of the aortic valve, the patients do not generally bear a reducing system, but are best treated by a tonic, or even stimulating regimen; and I entirely agree with Professor Law in his opinion, that the pseudo-apoplectic attacks, in cases of slow pulse and weakened left ventricle, are more frequently attributable to a diminished or feeble circulation, than to one of active congestion.

We have thus seven cases of permanently slow pulse. In five, organic diseases of the aorta or the valves, or both, was discovered on dissection; and in four, a manifest aortic murmur existed: in two of the cases the second sound was normal; and in two there was the murmur of regurgitation in the aortic valve. I do not believe, however, that the aortic murmur is any direct sign or necessary combination of the weakened heart. Its occurrence in these cases manifestly arises from the combination of aortic disease; and we have abundant evidence that a weakened heart, without aortic disease, may exist, and yet no murmur be produced. In the typhoid softening of the heart, we have rarely recognised a valvular murmur; and where it did occur, there was reason to believe that carditis had supervened. The typhoid softening, with a pulse from 30 to 40, commonly exists without any murmur. The preceding observations are published with the view of drawing the attention of the Profession to a combination of cerebral and cardiac phenomena, of which our knowledge is still imperfect.

*Dublin Quarterly Jour. of Med. Science, Aug.* 1846, *p.* 73.

27.—EFFECT OF ELECTRO-MAGNETISM ON THE ACTION OF THE HEART. —By Dr. Budge, Lecturer in the University of Bonn.

[Dr. Budge performed the following experiment in the presence of several very eminent gentlemen; the result of the operation he says is invariable.]

Let an electric stream, by means of a magneto-electric rotation apparatus, pass through the medulla oblongata of a frog, when the palpitations of the heart will cease as long as the rotation is in action; and it will begin again, in the same way as before the experiment, a few seconds after the rotation has ceased. This experiment produces, in fact, tetanus in the whole of the body. When any other part of the spinal marrow is exposed to the same electric stream, tetanus is equally produced; but the heart continues its movements without interruption. Finally, when the whole skin of the frog is subjected to this stream, so that one wire lies close to the heart, tetanus in the whole body is produced, but without affecting the heart. Directing the stream upon the ramus intestinalis nervi vagi, lying before the lungs, produces the same effect as upon the medulla oblongata.

*Lancet, May* 23, 1846, *p.* 581.

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28.—DIAGNOSIS OF CHLOROTIC ANÆMIA.

Every instance of anæmia is not always discoverable upon inspection of the tints of the skin, nor upon a survey of the state of the patient as to her embonpoint, since in some anæmic individuals, the cheek and lips retain a considerable degree of freshness and vivacity of color from a natural exuberant vascularity of the tissues composing them; and there are not a few anæmic patients who even grow fat during the malady. Now I should in such a case test the state of the lungs by asking the patient to make several forced inspirations, in order to discover whether the capacity of the lungs for atmospheric air were at all lessened by disease; and should she appear to be able to inhale fifty or sixty cubic inches at an inspiration, I should have a right to conclude that the air-cells of the lungs were free from pressure or obstruction, and duly expansible. This view might be confirmed by percussion and by auscultation of the chest. Still the respiratory difficulties remain to be accounted for, especially those resulting from every muscular effort. I should next examine the frequency of the pulse, which, in a state of rest, might be sufficiently quiet—as at 70, 80, or 90, beats per minute. If now the patient be requested to walk to the head of the stairs, and return immediately to her seat, she will, if anæmic, be found to have the pulse greatly accelerated and beating in the most troublous manner, to the number of 120, and even 160 pulsations per minute, while her respirations may amount to 40 and even 60 per minute. This fact serves to disclose the existence of an anæmic state, which, in order to effect any powerful innervation as exercise, &c., requires this great and extraordinary precipitation in the movements of the heart.—*Dr. Mcig's Notes to the Translation of Colombat on the Diseases of Females. Med. Gaz., July* 17, 1846, *p.* 115.

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## ORGANS OF RESPIRATION.

29.—ON THE CAPACITY OF THE LUNGS, AND ON THE RESPIRATORY MOVEMENTS, WITH THE VIEW OF ESTABLISHING A PRECISE AND EASY METHOD OF DETECTING DISEASE BY THE SPIROMETER.—By John Hutchinson, Esq.

[In a paper read before the Royal Medical and Chirurgical Society, by Mr. Hutchinson, he speaks of the difference in the quantity of air respectively drawn in or thrown out of the lungs, as follows:—

1. Residual air; which is that air remaining in the lungs that cannot be expelled by the most violent muscular effort.
2. Reserve air, or that which remains in the lungs after a gentle expiration, but which could be expelled by muscular effort.
3. Breathing air; that which is required in performing the ordinary gentle inspiration and expiration.
4. Complemental air; that air which may be drawn into the lungs by the most violent inspiration.
5. Vital capacity; all the three latter divisions combined, being the greatest voluntary expiration following the greatest inspiration.

[Mr. Hutchinson has proved that the quantity of air which can be expired does not depend upon the girth of the thorax, but the height of the individual; and this being known, the number of cubic inches he can expire, in a healthy state, may be ascertained with accuracy. On this subject Dr. Taylor said]

The application of this principle in the diagnosis of disease is most important. Mr. Hutchinson has found that persons who are the subjects of phthisis expire a quantity of air very much less than they ought to do if healthy. In one interesting case (that of Freeman), the quantity of air expired when he was in health was actually measured, and the experiment being repeated some time after, this man was found to expire ninety cubic inches less than on the first occasion; at this time no disease in the lungs had been detected by two experienced auscultators; the man, however, was not in good health, and some months afterwards he died of phthisis, as proved by post-mortem inspection. I, myself, examined a number of consumptive patients by Mr. Hutchinson's apparatus; I have found them to expire much less air than, by calculation, they ought to do if in health. Another singular and important result is this, that the quantity of air which a man can expire is not necessarily proportioned to the absolute size of his lungs or the number of cubic inches of space in his chest. We have seen, in the cases exhibited, that the lungs of one man who expired a large quantity of air were actually much smaller than the lungs of another man who expired a far less quantity. Mr. Hutchinson believes that the quantity expired depends less upon the size of the chest or lungs than upon the mobility of the thoracic walls. The diminished quantity of air expired in phthisis seems to result less from the space occupied by the tubercular deposit than from the restriction which is in some way imposed upon the thoracic movements. The bulk of the tubercular deposit in one case was only equal to one cubic inch, whilst the diminution in the quantity of expired air was forty-seven cubic inches. Hence, by this apparatus, it may turn out to be possible for us to distinguish phthisis at an earlier period than by any other means; and this has been actually proved in one of the instances adduced.

The same principle, however, complicates very much the application of Mr. Hutchinson's results in the differential diagnosis of disease. Many diseases, without the chest as well as within it, may limit the respiratory movements, and so lessen the quantity of air expired. So that, for the present, a great diminution of the expired air can only be considered to indicate the existence of disease somewhere; the seat and nature of this disease must be determined by other means, unless further investigation shall render the indications of the spirometer more precise than they are at present. As much has been accomplished in this direction as we could look for from one individual, and in a limited time. Mr. Hutchinson has done enough to make it incumbent on physicians generally to prosecute the investigation, so as to lead to the confirmation or invalidation of his views, as well as to their extension and limitation in particular cases. In the hospital to which I am attached, one of the spirometers has been purchased, and a certain number of observations have been made, which, as far as they go, quite confirm those of Mr. Hutchinson.

A great advantage in the use of the spirometer in disease of the chest is this, that comparatively little education is required for it. The practice of auscultation requires a long education and constant application; the spirometer may be used, for the purpose to which it is applicable, with very little previous study. Hence the importance of the instrument, as pointed out by the author, to army and navy surgeons, to insurance companies, and in private practice generally.

[At the conclusion of this paper, a Fellow of the Society submitted himself to experiment. He was found to be five feet five inches high, and according to Mr. Hutchinson's tables, the quantity of air he could expel should be 206 cubic inches; on breathing into a spirometer, he breathed 205 cubic inches. This was very satisfactory, and shewed that Mr. H.'s tables must have been constructed with great care and accuracy.]

*Med. Gaz., June* 12, 1846, *p.* 1047.

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30.—TREATMENT OF PNEUMONIA.—By Dr. A. T. Thomson.

[The indications to be fulfilled in treating inflammation of the lungs, are, 1st, To subdue inflammatory action; 2nd, To prevent deposition; and, 3rd, To guard against relapse. With the first intention, moderate bleeding, at the commencement of the attack, will be useful, and if the crepitant rale remains after this, it will be a safer criterion for the repetition of the bleeding than the beef-fed appearance of the blood. Dr. A. T. Thomson considers that the use of tartar emetic, as a contra-stimulant, in full doses, is far more advantageous than repeated bleeding. He observes:]

The opportunities which I have had of witnessing its influence have convinced me that doses of a grain, or a grain and a half, administered every third or fourth hour, after a moderate venesection, are sufficient to insure every advantage that can be anticipated from the employment of tartar emetic in pneumonia.

My practice, as soon as I have fully satisfied myself of the existence of the disease, and if the attack has not run on to the second stage, is to order one bleeding to the amount of sixteen or twenty ounces; to follow this, immediately, with three or four grains of calomel and one grain of opium, with the view of preventing that nervous irritability which often succeeds the use of the lancet, and of sustaining the beneficial impression made on the system by the bloodletting.

In two hours afterwards, I give one grain of potassio-tartrate of antimony in a fluid ounce and a half of emulsion of bitter almonds, and repeat this dose every third or fourth hour, until a decided diminution of inflammatory action takes place—that is, until the crepitation has nearly disappeared, and the sputa are no longer rusty and tenacious. The intervals between the doses of the tartar emetic are then extended to six hours, and afterwards to eight hours, and so continued until convalescence is confirmed. I prefer the bitter almond emulsion, on account of its containing hydrocyanic acid, which has a sedative quality, and a more decided influence in quieting the nervous system, and abating the cough, than small doses of opium. When the pneumonia is uncomplicated, this plan, with the occasional aid of some mild aperient, has, in my hands, seldom failed to carry the case to a successful termination. When the attack has passed beyond the first stage, when dulness on percussion indicates hepatization, then the object of the second indication—namely, to excite the capillaries and prevent farther depositions—requires attention; and, in order to fulfil this indication, I order four or five grains of mercury with chalk, or one grain of calomel, to be given in each interval of the administration of the tartar emetic. In the statistical table, twenty-three out of the thirty-eight cases were treated with mercurials in addition to the tartar emetic, because, in hospital practice, the patients are seldom brought in until the disease has progressed,

and the solid effusion, if I may employ such a term, has taken place. But in the remaining fifteen cases no mercurial was employed, the tartar emetic was alone trusted to, and it did not disappoint my anticipations; but in no instance was its employment commenced until after the abstraction of blood, either by the lancet or by cupping. I have never carried the mercurial action to ptyalism; but it is requisite to procure the usual symptoms of its decided impression on the habit, by producing slight tenderness of the gums. In ordinary cases, I have seldom had occasion to order blisters; but, from the nature of hospital practice, they are demanded, and they were employed in sixteen of the cases in the statistical table. Such are the advantages of moderate doses of tartar emetic in the treatment of pneumonia. In the same manner as when larger doses are administered, vomiting almost always occurs after the first and the second dose of the remedy; but on the third dose the tolerance is established, and even when the dose is increased, neither nausea nor vomiting afterwards takes place.

If I may be permitted to state a hypothetical opinion, I should venture to offer my view of what has been termed the tolerance of the habit against the well known influence of tartar emetic, when administered in moderately large doses. It has been supposed by Rasori and others, that the inflammatory state of the system in pneumonia is the cause of this tolerance, and that this would cease if the remedy were continued after every trace of general inflammation had disappeared. I am, however, of opinion, that the intolerance does not depend on the state of the habit, but solely on the topical influence of the tartar emetic on the mucous membrane; and upon its influence, also, on that membrane operating as a counter-irritant; and to this its beneficial effect in subduing inflammation is to be attributed. When a grain or more of tartar emetic is swallowed, a portion is carried into the circulation, and, acting on the nervous centres, it causes vomiting; but a portion also acts topically on the mucous membrane, and sets up subacute inflammatory action there. The second dose also causes vomiting, because the inflammation, although extended, yet is not sufficient to prevent absorption; but when the third dose is given, the absorption no longer takes place, and, consequently, no vomiting is induced. It is a well established fact, that an inflamed surface is incompatible with absorption; and to this, in a great measure, are we to attribute the accumulation of serum in serous cavities in dropsy. If my views be admitted, I would further state, that the determination of blood to so extended a surface as that of the mucous membrane, is, in my opinion, sufficient to relieve the congestion in the lungs; and that it is, in truth, the cause of the benefit which follows the employment of tartar emetic. Such is my opinion of the rationale of the action of tartar emetic in pneumonia; but on this part of my subject it is not my intention to insist, my chief object being to demonstrate, that this powerful therapeutical agent can perform all that can be expected from its administration in much smaller doses than Rasori and his followers have employed; that such doses incur no risk, seldom bringing on diarrhœa, whilst hypercatharis has followed the administration of large doses; and that in some cases it sets aside the necessity of large and repeated abstractions of blood, and, consequently, cures the disease without that injurious impression on the habit which has been frequently seen to follow copious bloodletting.—Another advantage obtained by this mode of practice in pneumonia is the gradual advancement of the convalescence, and the restoration of the patient to health and vigour without the aid of tonics. By gradually letting down the action of the tartar emetic, the stomach recovers its tone, and the assimilating function rapidly restores any waste which the necessary treatment of the disease may have occasioned. *Lancet, August* 22, 1846, *p.* 207.

### 31.—PNEUMONIA.

I have repeatedly seen pneumonia (one of the most fatal of all internal inflammations) and pleurisy terminate favourably without any active treatment, their existence having been overlooked until their course was nearly run. Surely these and similar facts should teach us a little more caution in assigning so large a part to ourselves, and so small a part to nature, of the credit that is attached to the favourable termination even of cases of severe inflammatory diseases.—(*Dr. Taylor.*) *Lancet, May* 9, 1846, *p.* 520.

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### 32.—COPAIBA IN INFLAMMATION OF THE MUCOUS MEMBRANE.

[At a meeting of the Medical Society of London, Mr. Roberts related a case of nephritis, in which, after bleeding, and the ordinary treatment of that disease, some inflammatory symptoms still remaining, and suppression of urine more particularly, he exhibited copaiba in ten drop doses three times a day, with the effect of restoring the secretion.]

*Lancet, June* 27, 1846, *p.* 705.

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### 33.—INHALATION OF THE FUMES OF NITRATE OF POTASH IN SPASMODIC ASTHMA.

A friend of Mr. James B. Harrison's, subject to spasmodic asthma, having seen in a newspaper, inhalation of the fumes of nitrate of potass recommended in that complaint, was induced to try it, which he did, with the most perfect success. He made use of a piece of blotting paper, about the size of his hand, dipped in a saturated solution of the nitrate of potass, and afterwards dried. This was placed on a common plate, and being ignited, the fumes were speedily sensible in the room. He described its operation "as cleaning the passages and gradually opening the air-tubes." He said that the respiratory murmur became louder and less stridulous under its continued influence. The effect was always produced in about a quarter of an hour, and though he had used the same remedy nearly twenty times, he had never been disappointed in the result.—*Lancet.*

A correspondent of the New-York Medical Gazette has derived essential benefit, in severe attacks of asthma, from the above remedy, and has prescribed it for several patients with equal success. He recommends that, at the approach of a paroxysm, the vapour should be inhaled by burning it in the room, or smoking it in a tobacco-pipe. *Med. Gaz. Sep.* 4, 1846, *p.* 421.

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### 34.—CONTAGION OF HOOPING-COUGH.—By J. J. M'Gregor, M. D.

[The subjects of epidemical and contagious influence, are always of the most interesting nature; and not the less so in connection with this disease, the pathology of which is so much disputed. It certainly is "unlike any other lesion as yet recognised by nosologists, forming as it does, a connecting link between the pyrexiæ and the neuroses.]

That hooping-cough is produced by epidemic influence is believed by all medical men; and that it may also be imparted by contagion is as generally acknowledged; yet, when both doctrines can be proved clearly, by well-authenticated cases in practice, it appears to me desirable they should be noticed. The cases I am about to adduce also illustrate another interesting fact—that after a certain time the contagious influence ceases to operate, and although the disease may continue in all its virulence, and even prove fatal, all danger of contagion, after the phase I allude to, is over. To determine what that exact period is, would, if it is possible to do so by ob-

servation, be of great importance, as it could be then distinctly laid down and acted upon.

E. and A. P——, two young ladies, sisters, the former aged ten years, the latter seven, took hooping-cough in London, in January, 1846, during the first stage of which they were sent to school in the suburbs. Two other young ladies, R. M. ——, and A. G.——, returned to the same school at the same time, perfectly free from cough, but in about ten days exhibited the usual symptoms, which terminated in the second stage, the peculiar phenomena of which serve to designate the disease. At this period, every child in the school, who previously had it not, took it, clearly proving that contagious, and not epidemic influence, was in operation. At the end of six months from the beginning of the first stage, and a month after the hoop commenced, M. M.——, aged seven years, who never had had the disease, with two other children similarly circumstanced, came to school, but not one of them took it, the poison being exhausted, thus proving the very limited nature of its existence.

It would appear that, on an average, about two months form the limit of its contagious properties, after which there is little or no danger. Although my chief object, in making these few observations, had chiefly reference to the etiology of hooping cough, still, I trust, a word about the treatment of this fatal disease will not prove irrelevant. Physicians of all countries agree that the first stage should be treated mildly, with antiphlogistics, daily emetics of ipecacuanha, &c. There is one point, however, upon which authors have not, in my opinion, sufficiently dwelt, and which, I feel convinced from observation, is the most important of all others—a strict confinement to the house, and, if possible, to one room, except during the summer months. In almost every case where this plan has been strictly enforced, in my experience, the result has been favourable, and the duration of the disease comparatively brief. Change of air, or the open air, is only to be recommended in the second stage; and even here, with much caution, a violent exacerbation of all the symptoms being a frequent result of such practice.

It is, as might be expected, in the second stage, or "stadium convulsivum" of Dr. Aberle, that the greatest difference of treatment exists: and it is not without some diffidence I venture to offer my opinion on so difficult a subject. In a paper, published by me in the May number of the Dublin Medical Journal for 1839, I have advocated a mild course of mercury where age and other circumstances did not prevent it—an opinion I have had no reason since to change. I must also bear my testimony to the value of the treatment recommended by the late Dr. Beatty, as well as his son, Dr. Thomas Beatty, of Dublin, which, in several recent cases, I decidedly found to cut short the convulsive paroxysm, in some instances in a week or ten days.

The formula recommended by Dr. Groves in his work on "Clinical Medicine," was that I employed; it is this:—Tincture of cantharides; compound tincture of opium; of each half an ounce; compound tincture of cinchona, five ounces and a half. A teaspoonful to be taken three times a day in a little boiling water, and if no strangury is produced, the dose is to be increased. The modus operandi of the mixture is too obvious to require comment.—*Lancet, Aug.* 8, 1846, *p.* 146.

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35.—ACTION OF AMMONIA IN HOOPING-COUGH.—By R. H. Allnatt, M. D., London.

[Dr. Wachtl, of Vienna, recommends the employment of ammoniated tincture of cochineal in hooping-cough. Dr. Allnatt thinks that the spasmodic action of the glottis which remains after the febrile action has sub-

sided, arises from morbid irritability of the stomach, engendering a morbid secretion, which stimulates the exhalent vessels of the trachea and bronchi to inordinate action. Dr. Allnatt adds :]

"The excretions of the stomach, in this stage of the disease, if tested, will be found, almost invariably, to be of extreme acidity, sometimes so intense, as to excoriate in their passage the œsophagus, and roughen the teeth, as effectually as would a dose of dilute hydrochloric acid. Emetics, so greatly extolled for their virtues in subduing the paroxysms of hooping-cough, act as temporary alleviants, by ridding the stomach of its acrid secretion; but the relief is transient, because the organ speedily resumes its disordered action. Many years ago, during a temporary visit to a populous town in the west of England, while the hooping-cough raged as endemic to an alarming extent, many children falling victims to its attacks, I had an opportunity of testing the merits of practice founded upon the views I have taken, and the result fully justified my anticipations, as the cases, however urgent, were rapidly and permanently relieved.

Dr. Wachtl, by his ammoniacal mixture, is stated to have "cured nine cases in from three to eleven days," and I fully believe the assertion to be quite consistent with truth. The liquor ammoniæ, the active ingredient of the formula, neutralized, in some degree, the acid matter with which it came in contact, and hence arose the benefit; but we have other alkalies less stimulating in their action, and much more effectual than ammonia.

After preliminary purgation with calomel (conjoined with antimony, if the febrile symptoms run high), and an occasional emetic to clear the stomach, nothing in my experience is so efficacious as small and repeated doses of the carbonate of potassa. The following combination has been extensively distributed to the poor in seasons when hooping-cough has raged as an epidemic, and I can attest the almost invariable success which has attended its administration—what portion of the merit is due to the cochineal I do not know :—Take of carbonate of potassa, one drachm; cochineal, ten grains; boiling water half-a-pint. For an infant, one teaspoonful to be taken thrice daily : the dose increased according to age.

In violent cases, much benefit will often accrue from the simultaneous employment of the following liniment, which is to be well-rubbed, morning and night, over the whole course of the spine :—Hartshorn and oil of amber, of each half an ounce. Mix for a liniment. *Lancet, June* 6, 1846, *p.* 626.

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### 36.—SURGICAL TREATMENT OF CROUP.—By M. Guersent.

[M. Guersent considers croup to be an angina laryngea, with formation of false membranes. The antiphlogistic treatment of croup, generally is useless, and the application of leeches in some cases positively does harm. Emetics are very useful, they act mechanically. Mercury is of great use if given early; but M. Guersent observes :]

Surgical means are those on which we chiefly depend, and by surgical means we understand not merely tracheotomy, but also local applications to the fauces. Those local applications are liquid or solid. Various liquids may be employed in the treatment of croup—dilute muriatic acid, solution of alum, &c., but that which should always be preferred is nitrate of silver, either in a very concentrated solution or at various degrees of dilution. Among the solid applications powdered alum and nitrate of silver in substance may be mentioned.

Dilute solutions generally possess little activity, yet they often suffice at the commencement of the disease, when pseudo-membranous spots form on the mucous membrane of the tonsils or pharynx. It is seldom that croup does not commence thus; sometimes. indeed, but rarely, it begins in the bronchial tubes or trachea, or attacks the larynx at once. Such an event

is, however, of extremely rare occurrence, and if false membranes are frequently not seen on the fauces, the reason is that the parts have not been inspected till the first stage of the disease has passed. I was once called to see a child who had the preceding night been sleepless, restless, and slightly feverish; there was no cough, nothing to call attention to the pharynx. I inspected the throat, however, as I make it a rule always to do, and perceived some white patches on the tonsils, which I immediately cauterized; but notwithstanding, croup of the severest kind set in, and tracheotomy had ultimately to be performed, but without success.

At the commencement of croup, then, false membranes almost always exist on the tonsils or on the pharynx, and are often overlooked, as the throat is not suspected until the larynx becomes affected, but the false membranes have then been detached from the fauces, and not a trace of them is visible. But it is when these false membranes exist on the fauces—that is to say, at the very commencement of the disease, that surgery is most efficacious; it is then that you may reasonably expect to cure croup, and will in fact succeed in doing tolerably often, whereas at a later stage you will almost certainly fail.

In cauterizing the fauces with solid nitrate of silver, which is commonly used, being always hard, care should be taken to have the child's head held firmly and most thoroughly steady; the caustic, too, should project but a very short distance beyond the port-caustic, for otherwise the slightest motion of the child might break it, and the fragment would fall in the pharynx. The proceeding is, in itself, a trifle, yet its consequences may be serious if those precautions are not observed. The caustic should not be applied to the false membranes only, the surrounding mucous membrane should also be touched with it, as thus the progress of the pseudo-membranous exhalation will most probably be arrested. The application of the caustic may succeed locally, and dispel the false membranes at the point to which it has been applied, but they may nevertheless extend and gain the epiglottis. Caustic is then still the best means at our command, but it must be applied in solution by means of a sponge proportionate in size to the width of the pahrynx, and attached to a piece of whalebone, bent at an obtuse angle; the position in which the surgeon stands while doing this is not a matter of indifference; if he stands in front of the patient, and the patient cough, the ejected matter may blind him for the moment, it is therefore advisable to stand at the side of the patient, and, passing the sponge down on the base of the tongue, suddenly semi-rotate it several times, the upper surface of the epiglottis is thus cleansed, and sometimes fragments of false membranes come away on the sponge; the epiglottis also may be raised, and a drop or two of the caustic liquid enter the larynx, which is known by the momentary suffocation of the patient and the succeeding cough. A few examples of cure have occurred after this operation, which should be repeated three or four times within twenty-four hours. Inhalations of muriatic and acetic acid have been recommended: in some rare cases they may be useful, but the efforts excited, whether by inhalations or emetics, have no chance of succeeding, except when the bronchia secrete mucus copiously, which detaches and favours the expulsion of the false membranes; all these therapeutic agents fail when the cough is constantly dry.

If the disease still gains ground, we must recur to tracheotomy, which, unfortunately, too often fails. This operation has always been performed, from time to time, in this disease. Twenty years since M. Bretonneau performed it frequently in an epidemic of diphtherite, but it has chiefly gained ground since the researches of M. Trousseau, who has performed tracheotomy in one hundred and thirty-six cases of croup, thirty-two of which recovered. I myself have operated in thirty-six cases, and succeeded completely in four. MM. Gerdy, Velpeau, Berard, Jobert, &c., have succeeded in some cases.

When the child is menaced with asphyxia, and the treatment fails to give

relief, a fatal termination is imminent. We should not stop to consider the situation or extent of the false membranes; the child will die in five or six hours, or sooner, and tracheotomy, however doubtful the result, is rigorously indicated. If the false membranes have only attained the larynx, the case is favourable; but delay lessens the prospect of success: in croup, as in strangulated hernia, we should always, without precipitating the operation, have the probable necessity of performing it in our mind. Tracheotomy almost always fails, because it is performed too late. The non-existence of false membranes in the fauces does not contra-indicate the operation. The child is threatened with asphyxia, makes violent respiratory efforts and will die if not relieved.

When the operation is performed, if there are no false membranes in the larynx, nothing more need be done than keeping the wound open. But if false membranes present at the wound, or are expelled, they should at once be extracted with a forceps. It has been recommended to pass down the trachea small pieces of sponge, moistened with warm water, which, being suddenly withdrawn, may detach the false membranes, but I should think that, by such a proceeding, we might push the membranes into the bronchiæ or impact them in the trachea. M. Guersent then recommended the use of the double canula, after the operation, in preference to the ordinary single canula, and deprecated introducing solution of nitrate of silver into the trachea to favour the expulsion of the false membranes, as practised by MM. Bretonneau and Trousseau. After the operation the surgeon must remember that he is also a physician, and combat inflammation of the lung if it exists, &c., by suitable treatment.

In the last number of the Annales de la Societe de Med. d'Anvers, M. Haine states that he has performed tracheotomy in croup in sixty cases, and eighteen times with success. He has become a convert to the opinion that the operation should be performed as soon as possible, as soon, in fact, as the larynx is affected, as the extension of the false membranes may be thus arrested. He objects to M. Bretonneau's double canula that it is too short and inflexible, and prefers a portion of large gum-elastic tube.

*Dublin Med. Press, July* 29, 1846, *p.* 69.

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37.—ASPHYXIA.—By Sir B. Brodie.

[The subject of asphyxia has been so fully treated of by Mr. Erichsen, as will be seen by an abstract of his paper in Retrospect, Part XI., Art. 13; and by other authors in Parts IX. and X. (see General Index in Part XIII.), that, in the Lectures of Sir B. Brodie, on the effects of Strangulation, not much fresh information will be obtained. When an individual becomes strangulated, the cause of death will generally be a closure of the trachea, preventing respiration, in the same way as if the patient were submerged. The following, according to Sir B. Brodie, is the mode of death:]

1. The trachea is obstructed, so that air cannot enter the lungs. 2. The blood passing through the lungs does not undergo that change which respiration produces, and which is necessary to life. 3. Dark-coloured blood, which has not been purified by exposure to air, is transmitted to the left side of the heart, and from thence to the brain and other organs. 4. The heart continues to act, circulating dark-coloured blood, but its actions gradually become weaker, and in the course of a very few minutes, cease altogether.

The heart is the ultimum moriens; and ceases to act, according to Sir B. Brodie, not from insufficient stimulus applied to it by the blood, but from impairment of its nervous energy—the result of black blood poisoning the brain. Mr. Beck has recently observed that the cardiac nerves are accompanied by "processes or elongations of the gray materials of the nervous system;" and this confirms Sir Benjamin in his belief that these nerves "possess the property of generating nervous influence," and that on their nervous influence the movements of the heart depend.

The symptoms of strangulation follow this course. 1. Discoloration of the lips, and other parts; the result of venous congestion, and of the want of oxygenated blood. 2. Involuntary actions of muscles; convulsive; not accompanied with pain, probably, and caused by "contact of the dark-coloured blood with the brain and spinal cord." 3. The diaphragm and intercostal muscles continue attempts to act, respiratorily—on an average, from a minute and a half to two minutes. 4. When the efforts at inspiration cease, "the pulse of the head and arteries is still distinctly to be felt; and the action of the heart continues of sufficient strength to maintain the circulation for two or three minutes longer." The heart having ceased to act, death is fixed; recovery is impossible.

If the ligature be removed from the neck before the contractions of the diaphragm have ceased, air is drawn into the lungs, respiration is restored, the blood is again oxygenated, and the animal rallies. Also, at a further stage, if in the short interval during which the heart continues to act, after the contractions of the diaphragm have ceased, artificial respiration be maintained, circulation and oxygenation are continued, and normal respiration is resumed. But the heart having fairly ceased to act, Sir B. Brodie is decidedly of opinion that nothing can restore the animal—that the heart will not again be brought to act so as to circulate the blood.

Treatment resolves itself into simple indications; it being remembered, however, there are necessarily but few cases in which the surgeon has an opportunity of hopeful interference. 1. If the ligature is removed before the efforts of the diaphragm have ceased, "all that you have to do is to watch the patient carefully; if natural respiration continue, leave him to himself; if it cease, supply the want by inflating the lungs artificially." 2. If the efforts of the diaphragm have already ceased, have recourse to artificial respiration without delay. There is no time to lose. In two or three minutes, after the last heave of the chest, the heart's action will have ceased, and then all hope is over. 3. In successful cases, so soon as normal respiration is established, inflation is desisted from. But treatment is not to cease. The patient is not safe. Dark blood has been circulating in the brain; and symptoms like those of poisoning by a narcotic may exist. Coma may remain. By and by the respiration may cease. Then has arrived a second period at which artificial respiration may be necessary to preserve life. And, in truth, the practitioner may expect to be called upon to inflate the lungs more frequently at this second period than at the first.

As to the mode of inflating the lungs, it is obvious that in the hurry and excitement of the emergency, we are not to trust to syringes, bellows, tubes, elastic gum bottles, or other contrivances which may be constructed very ingeniously and suitably for this express purpose. They are not to be had. And the surgeon is lucky if he can secure a common bellows. In a certain rural and remote district of Scotland, the belated traveller has found that "there is nae wale o' wigs," and wisely secured the first that came to hand. And so here. Secure the bellows. And if that cannot be had, look for a tube of any kind which may be inserted into the nostril: a large elastic catheter is very suitable; if this cannot be got, roll up a piece of card into a cylinder, and with this, and one's own lungs, a tolerably efficient substitute for bellows may be put in play. Then the following practical points require attention: 1. Avoid undue forcing of air into the lungs; otherwise the air-cells may be burst; air may enter the blood-vessels, and the result is certainly fatal. 2. Inflate at proper intervals; imitating as clearly as possible the rythm of natural respiration. 3. There is no necessity for warming or oxygenating the air; the attempt is just time lost. And it is fortunate that such manœuvres are not essential; seeing that the surgeon is not likely to be provided with either a pocket-stove, or a portable gasometer. 4. The upper part of the body is exposed, so that the movements of the chest may be accurately noted. 5. The inflating tube is introduced into one nostril. There is no necessity for opening the trachea; that

is only required when previous disease has obstructed the larynx. 6. The other nostril and mouth should not be closed. They are safety-valves, by which over-distension of the lungs is prevented. 7. An assistant presses the box of the larynx against the vertebra, so as to prevent inflation of the stomach. Were this cavity filled, the descent of the diaphragm would be prevented, and no air could enter the lungs. 8. Electricity and galvanism are inferior to the bellows, for they waste time in application. And the following assertion—repeating more broadly the opinion already stated—hurries him who believes it, to be the best employment of the very few moments he has to spare.

If that action of the heart by which the circulation is maintained should cease, as a consequence of the suspension of respiration, it can never be restored. This I positively assert, after having made it the subject of a very careful investigation. If others have held a different opinion, it is because they have confounded those feeble and irregular contractions of the heart, which may last for a long time, but which mean nothing, with those regular and powerful movements which are necessary to propel the blood through the system.

In the after-treatment—natural respiration having been restored—it may be necessary to abstract blood, on account of congestion; but this must be done with extreme caution, seeing that the powers of life have been brought low by the faulty circulation in the brain. The warm bath is not essential. But the patient should be kept in an atmosphere of a moderately warm temperature, "to compensate for the insufficient generation of animal heat, which is the consequence of the impaired state of the functions of the brain, whether arising from the influence of a narcotic poison, or from another cause.

In another lecture, Sir B. Brodie treats of *drowning*. The lamprey and benito can often vary their existence, pleasantly, by keeping their heads in air; but man cannot follow their example by immersing his head in water with impunity. Death takes place, as if by strangulation; in both cases the "want of due oxygenation or decarbonization of the blood being the sole cause of the animal's destruction." After immersion, a deep expiration takes place, by which bubbles of air are expelled from the lungs. Then comes an ineffectual effort to inspire; but water does not enter, instead of air; spasm of the muscles of the larynx seeming to prevent this. The attempts to breathe are repeated several times, and after each attempt a small quantity of air is expelled from the mouth and nostrils, until the air-cells of the lungs are almost completely emptied. Then insensibility occurs, and convulsive actions of the muscles mark the instant when the brain begins to suffer from the influx of the dark-coloured blood. Soon all motion ceases; save in the thorax, where the heart may be felt yet feebly pulsating. Perhaps some further ineffectual efforts at respiration are resumed, and then all is still. The interval between cessation of respiratory effort and cessation of the heart's action is brief in the case of strangulation; but it is still more brief in drowning. And the whole succession of events, in the latter case, succeeding rapidly, are complete within a very few minutes. Our author is firmly of opinion, that in cases of complete and uninterrupted submersion, life has never been retained after more than five or six minutes have elapsed under water. All stories to the contrary, he holds to be apocryphal; and we believe, most justly.

"The cases which have been reported to the Royal Humane Society of drowned persons who have been restored to life, when taken up cold and breathless after an immersion of half an hour, show that it is not travellers alone that are guilty of the vices of exaggeration and invention. We are compelled to regard these as mere extravagant fables, not more authentic, though certainly less poetical and elegant, than those of nymphs and mermaids, who reside in grottoes beneath the waves of the sea, or than those Arabian fictions, which have astonished our youthful imaginations with the

history of submarine nations, whose princes dwell in palaces of crystal at the bottom of the ocean."

The time during which divers, professed and accomplished divers, are able to remain under water, probably never exceeds two minutes, although it may seem to be much longer, and the exaggeration of the time of submersion, by a bystander, in the case of either drowning or diving, may very readily be imagined to take place as it were involuntarily, without any intention to deceive; the observer being himself deceived as to the lapse of moments, by the multiplicity of events which have been crowded into them.

"We all know that our estimate of time depends on the number of circumstances which successively attract our notice. When an event occurs which powerfully impresses the mind, we watch every one of the minutest changes that take place, and the time which elapses before the whole event is completed appears to be proportionally prolonged. Thus we hear of earthquakes in which the commotion of the earth is said to have continued during the space of eight or ten minutes, although in all probability they lasted for no longer time than thirty seconds; and in the same manner we may account for the mistakes to which I have just alluded. When the infidel sultan of Egypt refused to believe that Mohammed could have ascended into the seven heavens, and held one thousand and one conferences with the Deity in the brief space of a few minutes, the Mussulman divine, who was consulted on the occasion, endeavoured to bring his majesty to a more strict faith, by demonstrating that a short space of time was converted into a long one when a great number of important events were crowded into it."

The treatment of the drowned is similar to that of the strangled. If the removal from the water take place before the diaphragm has ceased to act, respiration may be resumed naturally; if not, artificial inflation is to be employed. And at two periods such inflation may be necessary; first, during the short interval between the cessation of the natural efforts to respire and the cessation of the heart's action; second, when the patient lies in a state of stupor, in consequence of the injurious effects produced by transmission of dark coloured blood to the brain. During resuscitation, "it must be of importance to supply the waste of animal heat, by placing the patient in a warm temperature;" the warm bath forms a simple and convenient method of attaining this object; and it may produce another good effect, "by promoting the natural efforts to respire." Abstraction of blood is even of more doubtful propriety than in cases of strangulation. And there are other things which should not be done.

"We have been directed to employ friction of the surface of the body for the purpose of assisting the circulation of the blood; as if this could do any real good when the action of the heart is ceased; or as if it would not do actual harm by overloading (if I may be allowed to use such an expression) the right auricle and ventricle, when the action of the heart was still going on. The injection of tobacco, and the application of stimulants, belong to the same class of remedies which are either mischievous or useless, proposed formerly by those who did not know what to do, but who thought that they were expected to do something, but now rejected by a more enlightened physiology." *British and Foreign Med. Review, July*, 1846, *p.* 162.

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## ORGANS OF DIGESTION.

38.—ON THE RELATION BETWEEN THE CONSTITUENTS OF THE FOOD AND THE SYSTEMS OF ANIMALS.—By R. D. Thomson, M. D. &c. &c.

§ The first individual who showed that wholesome food should contain matters identical with animal substances was Beccaria, of Bologna, who,

wrote an excellent paper on the subject in 1742. Dr. Prout has taught and extended this view for more than twenty years, and his opinions are now followed by all physiologists. That the systems of animals are capable of sustentation by a supply of fibrinous matter alone, is obvious from the history of the primitive inhabitants of the prairies of America; but it appears from experiments made on the nutrition of animals with pure fibrin, that an auxiliary in the production of animal heat is either indispensable or advantageous, since animals fed on fibrin alone invariably declined in health.—(Magendie.) That the amount of *calorifient*, or heat-producing food, in contradistinction to nutritive food, properly so called, as it has been well defined by Liebig, is out of all proportion greater than that required to supply the waste of solid matter of the body, is obvious from an experiment made by the author on a cow, in a state of rest, in which it was found that 15¼ lbs, of food were taken into the circulation in one day. Of this, only 1½lbs. was nitrogenous or nutritive food; the rest being *calorifient* and saline. From this experiment, frequently repeated with nearly the same results, the author concludes that in such a condition of the system, the natural relation of the nutritive to the calorifient constituents is nearly as one to eight one-third. The author gives formulæ for calculating the amount of nutritive and calorifient food, with a view to determine the laws of dieting. He also gives tables from his own analyses, of the amount of nutritive matter in about twenty different kinds of vegetables (principally farinaceous food.) By these it is shown that oatmeal consists of 1 nutritive and 5 calorifient matter, and barley 1 and 7—facts which explain the universal employment of these substances. From these tables it is also inferred, that as milk is the natural food of the infant mammalia, the constitution of their food should be formed on the same type, and that of the use of arrow-root or starchy food, where the relation of the nutritive to the calorifient matter is as 1 to 26, instead of being as in milk 1 to 2, is opposed to the principles attempted to be established by the author. He observes that, in nutritive tables, it is usual to give a column of equivalents—representing, for example, 100 parts of beans as equal in nutritive power to 1160 of starch; but, according to the author's views, such a method is not founded on scientific principles. In a correct plan of dieting, a proper equilibrium must be maintained between the wants of the animal organism and the constitution of the food. The importance of this view is supported by the results of an extensive series of experiments, made by the author with different kinds of food upon cows. These results are highly interesting, and were given in a tabular form, but our limits will not allow us to detail them at length.

The author concludes by observing that, when more condensed forms of vegetable are required, the object might be obtained by mixing certain portions of American flour with different kinds of meal, which could not otherwise be raised by fermentation; for example, by mixing equal parts of flour and oatmeal, flour and peas or barley meal, excellent bread could be formed; and two-thirds of Indian corn with one-third of flour yielded an excellent loaf.

Dr. Golding Bird, while he bore testimony to the industry and patient investigation which characterized the researches of Dr. Thomson, could not agree in the conclusions at which he had arrived with reference to the dietary of persons in health and disease. It should be recollected, that previous to the labours of Liebig, the proportion of carbon which existed in various articles of food was thought to offer a fair indication of their nutritive power. That distinguished philosopher, however, had shown the fallacy of such a view, and had proved that, with the exception simply of the fatty tissues, every structure in the body was supported, and its waste supplied, by the nitrogenized elements of food. Dr. Thomson's paper had the merit of satisfactorily showing that animals could not be well nourished on nitrogenized or carbonized food by itself, but that there should be a certain proportion between the two, so that the richly-nitrogized food might make

up the waste of tissue, whilst the richly-carbonized would become a source of animal heat. He (Dr. Bird) did not believe that the composition of the food of the infant animal, or milk, gave us any sure indication, in our selection of nutriment for the adult; for milk, nearly identical in composition, afforded nourishment to the infant cat, sheep, and porpoise; whilst, in after-life, how remarkably different was the food of these different animals.

Admitting that the tables of Dr. Thomson were correct, it would seem that the most nutricious food for infants and invalids, next to milk, would be beans and peas. This could not be followed out practically. White bread, according to the tables, was below beans and peas in nutricious power; but, trusting to the same authority, a portion of cheese added to it would, theoretically, raise it high in the scale of nutriments: yet who would carry out this view practically? He admitted that infants might be literally starved from eating arrow-root, in consequence of their supply of nitrogen being cut off; he yet believed that in these inquiries sometimes more than the mere chemical principles must be taken into the account in our determination of the diet we shall select for our patients. The ease with which different kinds of food were digested, and the vital endowments of the stomach, must not be overlooked.

Dr. Babington observed that the last speaker had gone much too far in his criticism, as every one must be aware that animal food and some other kinds of condensed nitrogenous matter might not be suited to children, from their difficulty of digestion. He considered the paper a very valuable one, and deserving of the thanks of the society.

[Although one of the speakers stated that there was not much novelty in the views brought before the society by Dr. Thomson, we confess that to us, and to all with whom we have conversed on the subject, many of the facts and deductions are quite original. The table, which exhibited an increase in the butter of the milk of the cow, in proportion to the augmentation of nitrogen in the food, is perfectly new, and apparently at variance with the theories of Liebig, who derives the butter from the starchy constituents of the food; but which Dr. Thomson reconciled, by considering the food in these cases to be so formed as to restore the proper equilibrium of the system of the animal. This view also leads to the novel suggestion, that by experiment we should determine the amount of matter removed from the system under different circumstances of rest and exercise, and that a true plan of dieting should be founded on such knowledge, and should not be left to mere instinct. We believe with Dr. Thomson, that on this consideration depend the true laws of dieting—a subject of so much the greater interest in an artificial state of society, where the food is too frequently concocted to minister to the palate instead of to the condition of the waste of the system. The relation which Dr. Thomson instituted between the food serving for nutrition and that for the mere production of animal heat was very striking, and we have certainly never seen the subject so treated before. This analysis of arrow-root, tapioca, and sago, was also quite new, and demonstrated the impropriety of employing them as food for children. The table, already alluded to, showed, contrary to the statement of one of the speakers, that arrow-root could not produce fat, and that such views are imaginary. The table containing the amount of albuminous matter in various kinds of vegetable food, was highly important. The higher position occupied by Scottish oats and barley-meal over English flour is a new and startling statement. We concur in the concluding observation in Dr. Thomson's paper, that his remarks tend towards an extensive field of experiment and deduction, of a highly practical nature, and may assist in indicating the direction in which the physician should pursue his inquiries when studying the laws by which the animal system is to be retained in a state of health.—*Reporter of the Gazette.*]

*Med. Gaz., May* 29, 1846, *p.* 965.

39.—CHOLERA, ITS NATURE AND TREATMENT.—By CHARLES CLARK, Esq., Kensington.

Cholera seems to be produced by a deleterious condition of the atmosphere, of the exact nature or even origin of which we are utterly ignorant, as no appreciable difference can be detected between this air and any other, by any means with which we are at present acquainted. This air having entered the blood through the medium of the lungs, a morbid impression is directly produced; the constitution as it were immediately takes the alarm, and a number of violent actions are set up by the vix medicatrix Naturæ to expel the dangerous intruder; hence the severe vomiting and purging at the onset, terminating in the rice-water stools, and producing extreme irritation of the spinal nerves, as exhibited in cramps in the abdomen, lower extremities, &c. These rice-water stools, as they have been not inaptly designated, are evidently nothing more than the serous or albuminous portion of the blood exuded upon the surface of the intestines, combined with the epithelium of the mucous membrane. Granting this, then (and I think it will scarcely be disputed), the immense quantity of these evacuations sufficiently demonstrate what must be the condition of the blood still remaining in the vessels. Being thus deprived of the greatest part of its fluid contents, of course the crassamentum, or fibrinous portion, is left in a viscid and thickened condition, quite unfit for the various purposes of circulation; hence local engorgements ensue, especially in the system of the vena portæ; hence the blueness and lividity of the surface; the diminished heat of the body, the feeling of cold and numbness, the scanty nature of the bile, urine, perspiration, and other excretions, the hollow countenance, the pinched nose, the sunken eye, the diminished respiration, feeble pulse, and death. If this sketch of the origin, progress, and termination of the disease be correct, what, then, should be our chief indications of treatment. Evidently, to moderate the morbid actions established by nature for the expulsion of the poison; and as this seems to be attempted by draining the blood of its fluid parts, a prime object should be, to replenish these as near as possible, and thus endeavour to maintain its natural fluidity and free circulation, so as to support the system whilst the exhausting processes are going on. 2dly. To prevent local engorgements, especially of the liver, vena portæ, and other portions of the abdominal circulation. 3dly. To promote healthy secretion and allay pain, irritation, and spasm, &c.

Now the question remains, how are these various objects to be most effectually accomplished? To fulfil the latter part of the first indication, I would propose that a drink should be prepared, resembling as near as possible the composition of the serum, with albumen, muriate and carbonate of soda, &c., only, of course, in a more dilute state, and that the patient should partake of this as freely as possible, in fact, ad libitum. Effervescing salines might also be given occasionally. To restrain inordinate action, promote healthy secretion of bile and perspiration, and at the same time allay irritation, spasm and pain, nothing, I think, will be found more effectual than a combination of calomel and Dover's powder, administered freely, until the violence of the vomiting and purging is restrained, and bilious evacuations are obtained; taking care, however, that the quantity of opium given be not such as to prove injurious to the brain, or to excite a fever of reaction—a result which I believe frequently occurred during the last epidemic, with the calomel and opium treatment, and often carried off the patient after the cholera itself had been surmounted. Should local engorgement ensue and continue, notwithstanding these means, bleeding might then be resorted to, regulating the quantity of blood abstracted by the extent of the congestion and constitution of the patient; but it is upon this principle alone, in my opinion, that blood should be drawn in cholera, for, as we cannot purify a well of impure water by withdrawing a bucketful, neither can we change the whole mass of blood by removing a portion. If it were possible to abstract the whole or even the greatest part of the

vitiated blood in these diseases, and replace it with healthy blood, adapted to the constitution of the patient, by transfusion or otherwise, I believe this would be the most successful practice of all; but, unfortunately, this is a task rather beyond our reach at present. To support the tone and energy of the nervous system, and promote animal heat, towards the close, and in some cases during the progress of the disease, stimulants, as wine, brandy, ammonia, &c., may be employed as auxiliaries, but only as auxiliaries; for I cannot understand upon what correct pathological principle they are made the sheet-anchor of the treatment, as some have advised. Nutritious diet, in proportion to the powers of digestion, should of course be attended to, and warm baths will be found serviceable.

*Lancet, June* 13, 1846, *p.* 651.

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40.—ANTIDOTAL TREATMENT OF EPIDEMIC CHOLERA.—By Dr. John Parkin.

[Some years ago, Dr. Parkin published his work on the treatment of cholera, since which time his views have been confirmed by the report of the Commission appointed by the Royal Academy of Medicine and Surgery, in Barcelona, with respect to the treatment adopted by him during the prevalence of cholera in Spain. The commissioners observe, that, under the ordinary method of treatment]

Nearly all the patients that had the disease at all severely, perished, but that in cases of true cholera, even when the stage of collapse has supervened, the employment of carbonic acid gas produces wonderful effects. This treatment, they add, should be continued even in the state of complete and confirmed collapse, on account of its being the most efficacious and direct of all the plans that have been tried; and it is certain that, if it is used at the commencement, and the patients do not neglect to call the medical attendant after the disease has once manifested itself, there will be few who come to this state of atrophy and wretchedness.

[Dr. Parkin considers that carbonic acid gas is not open to the objections against simple carbon. He observes:]

When this remedy has been given, in those cases in which symptoms denoting derangement of the stomach are alone present, the effect of the medicine, according to my experience, has been to relieve the symptoms almost immediately. The nausea is speedily dissipated, the giddiness and faintness disappear, and the sense of burning and heat at the pit of the stomach is no longer left or complained of, after two or three doses of the medicine. But the most remarkable circumstance is that which has attended the employment of the same agent during the stage of diarrhœa—that relaxation of the bowels which is, almost always, the precursor of the severe form of cholera. Of the numerous cases in which I have given the carbonic acid at this period, it has invariably arrested, with some few exceptions to be explained hereafter, the morbid process, at a longer period, it is true, but still at a regular and certain interval.

Neither is the remedy less useful in what has been termed the evacuant or second stage of the disease, characterized by rice-water evacuations. In these cases, the irritability of the stomach is speedily relieved, and the vomiting ceases soon after the first, or, at most, the second dose of the medicine; while the relaxation of the bowels is also arrested with as great, if not greater, celerity than in the former instance.

But it is in the commencement of collapse that the efficacy of the remedy is best observed, and its modus operandi the most apparent. Not only is the vomiting immediately arrested, as in the previous stage, but the thirst, heat, and burning sensation at the pit of the stomach, disappear almost as speedily. During a repetition of the medicine, the spasms, which generally prevail at this period, are effectually relieved; the evacuations from the

bowels become less abundant and less frequent; the depression of the system is removed; and the other symptoms characteristic of this stage vanish by degrees, so as frequently to leave the patient comparatively free from all ailment, after the administration of only five or six doses of medicine.

These remarkable and hitherto unexampled circumstances have frequently excited the attention and admiration of others, and are dwelt on, with peculiar emphasis, by Drs. Ardevol and Pascual, in the Reports which are added in the Appendix. It now only remains to ascertain the influence which the remedy exerts in the state of confirmed collapse. When it has not been previously administered its employment at this period is not constantly followed by any sensible effect or beneficial result. This, however, is only what might and what ought to have been expected from the employment of such a remedy at such a period; there being several causes in operation, either of which would, it is probable, satisfactorily account for the failure observed in this instance.

[Dr. Parkin considers this remedy useful even in the last stage; the following is his mode of preparing it:]

Thirty grains of the powdered carbonate, bicarbonate, or, as it is now termed, sesquicarbonate of soda, or potash, should be put into a large tumbler, with a wine-glassful of water; to which is to be added a dessert spoonful of any simple syrup, mixing the two ingredients together so as to form a homogeneous mass. Then take twenty grains of citric, or tartaric acid, and dissolve it in half a wine glassful of water, when the solution is to be poured on the contents of the tumbler, and the mixture drank off immediately, before the effervescence has subsided. If more convenient, or when to be obtained, lemon juice may be substituted for the citric, or tartaric acid, in the proportion of two tablespoonfuls of lemon juice to the same quantity (thirty grains) of soda or potash. As the object in giving the syrup is to render the mixture more tenacious, and to prevent the gas escaping so rapidly as would otherwise be the case, it is not necessary, when the lemon juice is used, to add any syrup. *Med. Gaz., Aug.* 21, 1846, *p.* 339.

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41.—OBSERVATIONS ON CHOLERA.—By J. G. French, Esq, Surgeon to St. James' Infirmary.

[The most evident lesion in cholera Mr. French considers to be "loss of power in the heart." He says it explains the diarrhœa, the vomiting, the cramps, the suppression of bile and urine, and even the diuresis which Dr. Graves has observed in some cases of cholera. He observes:]

That the action of the heart is really greatly depressed in cholera is admitted by all who have attended to the subject; and if the removal of the cause of this depression be out of our power, what are the most favorable compensating physiological conditions for the patient? The blood is a fluid intended by nature to be constantly circulated, and the evils of congestion and a true asphyxia would soon result from a loss of power of the heart, if no compensating means existed in the system for remedying this evil when it occurs in a greater or less degree.

If the blood is to remain stagnant in the vessels, the less fluid it is in its consistence the better. If the blood, therefore, cannot be circulated, the best thing that can happen is that the serous or fluid portion of it should be carried away in proportion to the degree of its stagnation. This, then, appears to me to be the explanation of the profuse discharges which take place in cholera; this is the reason for the alteration in the relative constituents of the blood.

We admire the ingenious contrivance of the governor of the steam engine—the valve of which opens exactly in proportion to the exigencies of the machine, and we should not expect to find less perfect contrivances in the animal economy. The degree to which these symptoms extend is ex-

actly in proportion to the force with which the heart is controlled. The attack may be so severe that the patient dies without discharges at all, or it may be so mild that the diuresis (observed by Dr. Graves) may be sufficient for the relief of the patient. If, however, there be a state of collapse, in which the pulse is scarcely or not at all perceptible, the system remarkably drained of its fluids, and the blood in that tar-like condition which is so well known to exist in this disease, then, if there be thirst, and the patient drink freely of cold water, a rational expectation may be formed that the circulation of the blood will be gradually restored to its natural vigour in the following manner:—1stly, by the vigorous muscular pressure of cramps, which propels the tarry blood towards the heart. 2ndly, by absorption of water into the blood-vessels, which has a direct tendency to restore the blood to its natural or liquid condition. 3rdly, by nausea, which produces a general relaxation of the system; hence diminishing the obstruction to the passage of the blood in the vessels. 4thly, by retching or vomiting, which mechanically assists in driving forward the blood in the congested vessels.

These views were published by the writer in 1832, and more fully in 1835, but it was not until 1842 that he published a paper on the subject of the cramps in cholera. As the surgeon to a large metropolitan parish, he cannot be supposed to be without opportunities of rendering himself familiar with the complaint of which he writes. But it was in 1832, when, as surgeon to a parochial cholera hospital, his whole time and attention were devoted to the study of the disease, that his views and opinions were principally formed. Subsequent experience based on the results of treatment has convinced him of their truth. *Med. Gaz., Aug.* 21, 1846, *p.* 328.

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42.—TREATMENT OF CHOLERA.—By Ollapod, H. C. S., Madras.

On first visiting a patient in this disease, I give, calomel, ten grains; rhubarb, ten grains; compound powder of aloes, ten grains; mixed and formed into a bolus. This I follow up with ten or fifteen minims of liquor ammonia, mixed in a little cold water, and I repeat this dose in half an hour, if rejected; otherwise, I give a second, and even a third dose. To quell the stomach's irritability, effervescing draughts of carbonate of soda and tartaric acid, in small and repeated doses, are given, and soda water is prescribed to allay the intolerable thirst. The liquor ammonia, I at the same time use undiluted, externally, over the chest, abdomen, and upper and lower extremities, as a rubefacient, while I pay attention to the head by cold applications of water or vinegar and water.

In the generality of cases that have come under my notice for the last quarter of a century, the brain would appear to share the greatest burden of the disease, and hence I have been induced to adopt the remedies I have just enumerated. The after-treatment is simple enough—namely, the exhibiting a laxative after the second or third day, and tonics for a week afterwards. Opium in any shape, given in cholera—too universally resorted to—I have remarked, tends to embarrass the cerebral functions, causing pervigilation, and, by consequence, commotion of the *vis vitæ*. If spasms be present, I am in the habit of stretching the lower extremities, by laying hold of the foot, as if in the act of taking off a boot, and bending the toes and forepart of the foot towards the patient, as he lies down, and the heel I draw towards myself. This must be done gently and repeatedly. I also employ shampooing. *Lancet, Oct.* 10, 1846, *p.* 410.

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43.—TREATMENT OF DIARRHŒA.—By George Smyth, M. D.

[Dr. G. Smyth, of the Charlotte-street School of Medicine, has directed

the attention of the Profession to the use of acetate of lead in that obstinate diarrhœa, which sometimes accompanies uterine phlebitis and peritonitis even after opium, chalk, or catechu have failed. He considers the diarrhœa a species of sympathetic irritation (uninflammatory), and may be subdued in a very prompt manner even after the usual remedies; that on the second day of its administration, the amendment in his case was not only perceptible, but very considerable: its modus medendi he attributes to its sedative and astringent (we suppose sedative to the nervous and muscular system, and astringent to the mucous lining of the canal), properties; and he considers it a proper subject of inquiry as to which of the properties the amendment was principally to be attributed, to one or to both. Dr. Smyth thinks its sedative property the most important, because by it the undue peristaltic action was arrested. Dr. S. also appeals to its influence when given alone in many lingering and obstinate cases of diarrhœa and dysentery, in proof of the efficacy of the salt.]

Judging from analogy, there appears to be little doubt of this. It has been found, that a solution of acetate of lead is capable of almost immediately stopping the vermicular movement of the intestines, if brought in contact with their coats; and it is well known that it possesses also the power of allaying the pain of inflammation when directly applied to an inflamed surface. Indeed, the quietude, and immediate relief from suffering, which I have occasionally observed to follow its application in some painful affections, especially of the mammæ, occurring in women about the middle period of life, have often astonished me. Even the lancinating and burning pain of carcinoma is sometimes greatly mitigated by the steady application of the diluted solution of diacetate of lead of the Pharmacopœia.* These effects, then, it must be admitted, are evidently the result of a sedative action exerted directly on the nerves of the parts to which the remedy is applied. But all the preparations of lead appear to have a peculiar affinity for, and to act in some measure specially on, the nervous system, whether they be applied externally or taken internally. Of this we have a somewhat conclusive illustration, in the giddiness, coma, apoplexy, and that peculiar paralytic affection of the voluntary muscles (lead palsy) to which those who have been for some time exposed to the influence of lead are liable. It is the opinion, even of a great authority, that colica pictonum is a nervous disease (a neurosis), the spinal marrow and the abdominal plexuses of the great sympathetic appearing to be the peculiar seat of lesion; the constipation seeming to depend either on the abolition of the contractile motion of the intestines, or on the suspension of the secretion of the intestinal mucus.

It is undoubtedly, then, this sedative, united with the astringent property of the acetate of lead, which renders it so very serviceable both as an external and internal remedy in the treatment of many special diseases. But in none, perhaps, are its beneficial effects, as an internal agent, more manifest than in the chronic form of diarrhœa and dysentery, for the cure of which it is decidedly far superior to any other remedy that has yet been recommended. In them it appears to quiet the intestinal action and allay the pain by blunting the insensibility of the mucous membrane, whilst, at the same time, by constringing the extreme vessels, it checks excessive secretion and thus stops the discharges. *Lancet, Sept.* 5, 1846, *p.* 265.

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44.—ERGOT OF RYE IN DYSENTERY.—By F. S. Gervis, Esq., Tiverton.

[After using the ordinary remedies in the treatment of a case of dysen-

* The officinal preparation is decidedly much too weak. For painful affections of the breasts, it should be made at least double or treble the strength of that ordered by the colleges; and it is likewise of great advantage to apply it a little warm. If these precautions be attended to, it will be found much more effectual as a sedative.

tery, without any benefit to his patient, Mr. Gervis resolved upon giving the ergot of rye, in conjunction with tinct. of iron, which he did, as follows:—]

Battley's solution of secale, one drachm; tincture of sesquichloride of iron, one drachm; water, six ounces. Mix, and give a quarter part every four hours. After the first mixture had been taken, I found a visible improvement had taken place. The ergot had produced slight pains in the bowels; but after she had taken three of the above mixtures, the bloody discharge and other symptoms had entirely ceased. There was no return of the complaint after this period: and considering the effect produced by the ergot to have been so decided, I have thought it desirable to ask the favour of the insertion of this case in the *Lancet*. The properties of ergot are invaluable in cases of hæmorrhage arising in other parts of the body; and in a severe case I lately had under my care, in a young man, of hæmorrhage from the urethra, which continued for days, I found that the ergot with the steel mixture succeeded most effectually.

*Lancet, July* 11, 1846, *p.* 39.

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45.—PRESENCE OF CONFERVÆ IN SOME EXUDATIVE MASSES PASSED BY THE BOWELS.—By Dr. J. H. Bennett.

[Dr. Bennett exhibited fragments of exudative masses in laminæ, which had been passed *per anum* by a woman who applied at the Royal Dispensary. She stated that, on the previous day she felt soreness and pain in the abdomen, and having been for some days constipated, she had been induced to take castor oil. After the operation of the medicine, she observed in the vessel several fragments of what appeared to her to resemble calves' leather which had been steeped in water. Being alarmed, she brought them with her to the Dispensary. These fragments varied in size; the largest was of a square form, about three inches broad, three-and-a-half long, and one-eighth of an inch in thickness. It was of a straw-yellow colour, perfectly smooth on both sides, soft and easily torn, presenting a fibrous structure. A minute portion, viewed with a power of 220 diameters, linear, was seen to be made up of a mesh-work of non-ramified filaments, varying in diameter from one-500th to one-200th of a millimeter, marked here and there irregularly by transverse striæ. On increasing the magnifying power to 500 diameters linear, these transverse striæ were seen to be the septa of jointed tubes, placed at irregular distances from each other. Numerous oval and rounded granules (probably sporules) were scattered amongst the tubes, their diameters varying from the one 500th to one-300th of a millimeter in diameter.]

Dr. Bennett stated that cryptogamic vegetations had been observed in mucous membranes by Langenbeck, Klenke, Vogel, and other histologists. This was the first time he had himself seen such a structure from the mucous membrane of human intestines, and they differ materially from those represented by Vogel.—(*Scones Histologiæ Pathologicæ, Tab.* xxi.)

*Monthly Jour. of Med. Science, Aug.* 1846, *p.* 158.

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46.—TREATMENT OF HÆMATURIA.—By Dr. Fife, Newcastle.

[As there are various causes giving rise to hæmaturia, so must its treatment be varied correspondingly. No general plan can be adopted, and in this, as in all other cases, the general condition must be particularly attended to. Dr. Fife observes:]

General blood-letting, according to my experience, is seldom requisite, as in those cases where the circulation was most active, other means, followed by less permanent reduction of the powers of the system, invariably sufficed to subdue the excitement; where, however, the patient is young, vigorous, and plethoric, much time and suffering will doubtless be saved by recourse to it. The topical abstraction of blood, by cupping over the loins, where the kidneys are affected, is most beneficial; and where the bladder

is similarly engaged, leeches to the groins, or perineum, were equally useful. In renal cases, dependent on, or connected with, sub-acute inflammation, counter-irritation, by means of the antimonial ointment, proved of great service. Blisters are to be avoided. Where the pain seemed connected with calculi of the kidney, friction with morphia in the form of ointment, or the belladonna in that of plaster, applied over the loins, materially relieved it. In cases where the circulation was increased and where sickness was not urgent, the tartrate of antimony was given with advantage, and where, by the reason of the presence of sickness and vomiting, it appeared contra-indicated, the digitalis was advantageously substituted for it.

As a means of arresting the hæmorrhage, the acetate of lead and sulphate of alum both claim confidence, although neither of these medicines is free from very decided objections which may, however, be much diminished by their combination with other medicines; the acetate of lead, for example, should be combined with opium, and the sulphate of alum with hyoscyamus. When so combined, the constipating or paralysing effect of the one is in a great measure counteracted, and the constipating and irritating tendency of the other, as certainly lessened. As a means of relieving pain, hyoscyamus and conium are decidedly preferable to the preparations of opium, and when given in sufficient doses, and at proper intervals, hardly less to be relied on. Where the pain is connected with the bladder, and that viscus is in a highly irritable state, suppositories are most efficacious, and free from the objection which attaches to the liberal employment of anodynes by the mouth. The remedy against the discharge of blood in which I have most confidence, and which has in no case produced any unpleasant effect, is the secale cornutum. I have generally given it in doses of from ten to fifteen grains, in combination with the carbonate of soda, or potass, and at intervals of from four to six hours, according to the urgency of the case. Where it at all disorders the stomach, as it rarely does, this tendency may be diminished by the addition of a few grains of ginger, or compound cinnamon powder. Of the alkalies, the liquor potassæ is the most convenient, being readily combined with the tincture of digitalis, where vascular excitement calls for it.

Of the acids, the sulphuric, hydrochloric, and nitric, may all be given with benefit, as all of them seem to have the effect of diminishing the hæmorrhage, the selection of any particular acid being regulated by the circumstances attendant on individual cases. The vegetable acids I have not used medicinally, although I have allowed the use of lemonade, where patients desired it, and where no contra-indication existed. In decidedly chronic cases, both turpentine and copaiba have proved useful, appearing not only to diminish the tendency to hæmorrhage, but also to act most beneficially on the mucous membrane, especially by lessening the discharge of mucus, which is necessarily attended with considerable waste of the powers of the system. The pareira brava and uva ursi have also been used with more or less advantage. The preparations of iron in combination with quinine and iodide of potassium, are useful in improving the general health and tone of the system; the hydrochlorate of iron has been supposed to restrain the hæmorrhage, but how far it really possesses this power, I do not feel competent to pronounce any opinion. Cold, in the form of enemata, and also externally applied, has been highly recommended. In the first form I have had no experience of its effects; but in the external application of cold cloths to the perineum, and over the pubes, when the hæmorrhage is from the bladder, I have some confidence, but only as secondary, or auxillary to other and more decided measures. Such is a very brief outline of the treatment of this disease, which my own experience has taught me to look upon as most efficacious, and which, when duly modified according to circumstances, will be found generally applicable.

*Provincial Med. and Surg. Journal, May* 20, 1846, *p.* 225.

47.—REMARKS ON THE TREATMENT OF PERITONITIS.—By Dr. Corrigan, Dublin.

[The constipation which occurs in cases of peritonitis should never be treated by giving acrid purgatives. Dr. Corrigan observes:]

Relieve the serous inflammation, and permit the peristaltic action of the intestines to return, but do not force it; look upon the constipation as effect, not as cause. Taking the case in another point of view, of what harm is the presence of pasty fæcal matter in the intestine productive? We know it to be unirritating in its effects in the bowels of the child; surely it cannot, then, be the cause of such mighty mischief as to require removal by the administration of croton oil and such other like drastic purgatives. Let the first object be, therefore, to look upon inflammation as the cause of the constipation in peritonitis, and to endeavor to remove it by the application of leeches, by blistering, and putting your patient under the influence of mercury; and recollect what I told you of the danger of a relapse from the use of stimulants of any kind. While we lay down these principles as our guide in treatment, it is not necessary—if I may use a vulgar phrase—to ride a hobby. Where accumulations occur in the colon, their removal may be advantageously obtained by the introduction once or twice of the long tube, as recommended by Dr. O'Beirne; but it is worse than useless to repeat this process after, and so attempt to force a discharge of the contents of the intestine. Supposing a man labouring under pleurisy opened, what would you think of the person who would force the intercostal muscles of the affected side into action, and cause a rubbing together of the two sides of the inflamed membrane? Again, fancy the abdomen of a patient, affected with peritonitis, exposed to your view, with the cœcum and small intestines intensely inflamed, and that while nature was doing her best to keep these parts in a state of rest, croton oil was thrown into the intestinal tube by one inlet and stimulant injections through another. Surely such would be an error of practice perceptible to the commonest capacity. Pay no attention, then, to the unirritating pasty fæcal matter lying in the intestines beyond the injection recommended above, but direct all your faculties to the subduing the existing inflammation by leeches, bleeding, blistering, and the administration of mercury. *Med. Times, May 9, 1846, p. 99.*

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48.—TREATMENT OF APHTHÆ BY SULPHURIC ACID.

Professor Lippich, of Padua, has recommended the following liniment in the treatment of aphthæ;—Honey, 15 parts; diluted sulphuric acid, 1 part by weight. The ulcerated surfaces should be occasionally brushed over with this liniment by means of a camel's-hair pencil. The proportion of sulphuric acid may be increased if the case is obstinate.—*Gaz. Méd.*

*Med. Gaz., July 3, 1846, p. 43.*

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49.—EXISTENCE OF BEETLES IN THE HUMAN STOMACH.—By Dr. Pickells, Cork.

[This is the case of a young woman, Mary Riordon, who discharged from the stomach, during several years, insects of different sorts, and in different stages of their existence, especially larvæ of the species of beetle denominated blaps mortisaga. The truth of the ejection of these insects is well and respectably authenticated, and leaves no doubt that they were developed in the stomach of the patient. Dr. Pickells, who relates the case, says, "After having been about ten minutes in the room, the emetic which I had seen given to her began to act. She threw up the liquid (water) she had taken with it, and seven larvæ of the blaps mortisaga. She was at this time sitting on a chair. She now swooned and fell on the floor, be-

coming stiff and motionless, her arms lying inflexible by her side, and her hands clenched.]

The patient has since died; having during the last twelve years of her life been confined to her bed by paraplegia. For several years after the extirpation of the insects by, as stated in the history of the case, six ounce doses of the oil of turpentine, she continued, with the exception of the occasional return of convulsions, to enjoy tolerable health, her other distressing complaints, vomiting of blood, retention of urine, dropsical swellings, &c., having all disappeared.

During this period she married a person named Duggan, a hatter by trade, who died in two or three years after in hospital in Dublin, whither he had gone, accompanied by her, to seek employment. The last time I saw her was in July, 1830, upon her return from Dublin, after the death of her husband. She was fat and ruddy, and appeared to be even strong. She then informed me of the particulars which have been mentioned, and in addition, that she had had two children, of whom one was still-born, the other, a seven month's child, who died in convulsions three hours after birth. In the course of the same year, or in the following, she became an inmate of the workhouse of this city, in which establishment she died. While in the workhouse, Dr. Edward Townsend, the physician of the establishment, supposing the convulsions were still kept up by a remnant of the insects, gave her, as he informed me, repeated doses of the oil of turpentine to test the case, but there was no return of the discharge of insects. The convulsions continued occasionally to recur to the last, exhibiting from the irritability of the cerebro-spinal system, as sometimes happens in the case of epileptics, the melancholy spectacle of one-half of the body being convulsed, while the other half was paralytic. Dr. Townsend has authorised me to say, that during the period of his long attendance on her, which was of several years, nothing transpired which could have led him to suppose that there had been ever any attempt at imposture. She died at an age of over forty.

Though the other beetle larvæ, and the diphterous larvæ, and the ascarides, discharged from time to time, as specified in the history of the case, contributed, doubtless, their share of irritation, the larva of the Blaps mortisaga, or churchyard beetle, were evidently the principal tormentors, the number of which she continued to discharge for three years and nearly three months, that is, until they were killed off by the enormous doses stated, of the oil of turpentine, may be said to be astounding. The average number discharged in each successive instance not diminishing, but, as appears from the registry, rather increasing, to the last, as if they continually repullulated, or, to use the patient's expression, "spawned." Until under the operation of large doses of the oil of turpentine, they passed down per anum, they were all, with few exceptions, extruded from the stomach, the discharge being commonly attended with vomiting of blood, and, in almost every instance, with convulsions. Many which I measured were an inch and half in length, and four lines and half in girth. I gave several to the itinerant proprietor of an oxy-hydrogen microscope, who visited this city, and afterwards other towns of the empire. Though sufficiently evident, without the aid of the microscope, the terrible conformation of their jaws and feet was made fully apparent by means of this instrument. The forefeet in particular were tremendous.

In the Cyclopœdia of Practical Medicine, article Worms, a case is cited, published by Ariel, in the Scientific Transactions of Upsal, which it will be perceived, bears considerable analogy to the present. "An immense number of insects (all, it appears, beetles of various sorts), existed in the stomach for the long period of two years. They were at length, after a great number of unsuccessful experiments, expelled by a mixture of turpentine and linseed oil. Of various species of staphylinus, there were 263 in all.

The larvæ were almost past counting, especially those of the Tenebrio molitor and the carabus."

Larvæ of insects are, there is reason to think, much oftener eliminated from the stomach and intestines, both by children and adults, than persons in general appear to be aware. The writer of the article entomology in Rees, goes the length of saying "that certain kinds of these supposed worms, which infest the human race to the destruction of thousands, in the age of infancy, are really no other than the larvæ of insects." The present mayor of this city sent me, in January, 1830, a larva, which was proved to have been voided per anum the evening before, by a child, a male, of only three months old. It was alive. The evening before that on which it was voided, the child's mother thought it would have died from the violence of screaming and convulsions. The child, though healthy looking, as I saw, could bear scarcely anything on his stomach since birth. The larva I ascertained, by the peculiar termination of the tail, to be that of the blaps mortisaga. From frequent observation, I may add, the larva of this insect is what naturalists term, "amphisbænous,"—being enabled, by means of a foot in the tail, to walk with facility backwards as well as forwards.

In an early volume of the Philosophical Transactions a case is given by Mr. Jessop, of a girl of eight months old, who vomited three hexapodes (larvæ, it would appear, of beetles), all very active and nimble.

The following, copied from the Cumberland Packet, is taken from the Dublin Weekly Register, July 26, 1823. "A woman, named Graham, about sixty, of Harrington, Cumberland, has, during more than twelve months, been afflicted with pains in the head. Lately, a considerable degree of rigidity took place in the muscles of the lower jaw, and continued nearly five weeks, when the patient, who is in the habit of taking snuff, having occasion to apply her handkerchief to her nose, from which, by expelling the air with considerable force, she discovered that she had voided a worm of about the size and appearance of a caterpillar. Its head was black, with two feelers; it had a great many feet. The patient, since discharging the worm, has continued perfectly free from headache. It is conjectured that the worm must have been lodged in one of the sinuses of the frontal bone, communicating with the nose." Burserius, vol., i. p. 433, alludes to "the fever arising from the rending headache, occasioned by worms in the frontal sinus." A case of larvæ of the œstrus discharged from the maxillary sinus is given in Duncan's Annals of Medicine, vol. vi.

The following, copied from an American paper, is taken from the Cork Southern Reporter, July 29, 1828:—"Astonishing Fact.—There died recently, in the town of New Stonington, Connecticut, a woman, aged about forty, who had been ill a long time, and complained of excessive pain in her heart. She left a request that the physician who attended her should examine the cause of her extreme suffering. The request was complied with, and in the centre of the heart there was found a living worm, an inch and a quarter long, and of large size." The so-called worm was not improbably, as the worm so-called in the Cumberland case, the larva of an insect; the received nomenclature including under the general name "worms," the larvæ of insects, though there is this marked difference, that worms undergo no changes. Worms have been found in the liver, spleen, &c.

Many instances might be adduced of diseases which had long resisted other treatment, having yielded to anthelmintics. In a paper published some years since, in the ninth volume of the London Medico-Chirurgical Transactions, Dr. Rumsey gives various cases of lymphatic hæmorrhage and pulmonary affection which had been cured by an anthelmintic course, the lungs, as well as the brain having been found frequently to participate in the disease, and, at times, the uterus; a profuse hæmorrhage having ensued from one or other organ, and been repeated, at uncertain intervals; in some instances without any suspicion of the real cause, and, consequently,

with an erroneous practice. His plan was to strengthen the system generally, and then give anthelmintics. The late Surgeon Evans, of the Douglas Dispensary, near this city, informed me that he brought off from a patient, the wife of an artilleryman, who had laboured, upward of eight years, under tic douloureux of the infra-orbital nerve, a tape worm, five yards and a half long, with a mixture of half an ounce of castor oil and half an ounce of oil of turpentine. The bowels had been constipated for several days previously. She continued to be much relieved after the discharge of the worm. She had been treated by medical men in Dublin, London, and other places, without benefit.

*Edinbro' Med. and Surg. Journal, p. 334, Oct. 1845.*

At the late meeting of the British Association, at Southampton, Sir J. Richardson presented to the zoological section a specimen of the beetle, known as blaps mortisaga, which is said to frequent grave-yards, and to prey upon the dead. The specimen presented to the section had been found imbedded in some artificial concrete, where it must have been, at least, sixteen years, and yet, when the animal was brought to him, it was alive, and had lived six weeks after. Mr. Spence said, that the ordinary duration of life of the blaps mortisaga was two or three years, and that it should exist so long was very remarkable. Dr. Darwin stated, that this insect was very tenacious of life. He once left one in a covered vessel, without food, for a year, without its being killed. He had also dropped hydrocyanic acid upon one, but it walked off, quite unaffected by the poison.

The tenacity of life in this insect has been long noted. Many years ago, Mr. Henry Baker found that the blaps revived after being plunged repeatedly into spirits of wine. On one occasion, it was left a whole night in rectified spirit, but, notwithstanding this, it is stated to have revived, and lived three years. This tenacity of life has not been found to extend to the larvæ of the insect; some of them, kept by Mr. Pattison, speedily died. Hence it appears not difficult to explain a case reported by Dr. Pickells; in which these larvæ are said to have been expelled, for a long period, from the human stomach. *Med. Gaz., Oct. 9, 1845, p. 641.*

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## URINARY ORGANS.

### 50.—ON THE URINE, BLOOD AND DROPSICAL FLUID IN MORBUS BRIGHTII.—By Dr. Heller.

Heller has latterly been bestowing considerable attention to the pathological character of the animal fluids in Bright's disease, and has published a long paper, containing the results of his researches, which are, in many points, original, and, on the whole, offer a fair general account of what is at present known respecting the chemical and microscopic character of the blood, the urine and the dropsical fluid in this disease. The following account contains the substance of his observations:—

*The Urine.*—In the progress of Bright's disease of the kidney, three stages may be usually recognized, in each of which the urine undergoes, in a more or less marked degree, certain peculiar changes. In the first stage, which is that of congestion, this fluid has a reddish colour, owing to the presence of blood or of its colouring matter; nevertheless, provided the quantity of blood is not large, the reaction of the fluid is acid. In the second or chronic stage of the disease, the urine is paler, having a clay-yellow or whey-like colour; while, in the third stage, or that of dissolution (for it usually occurs just before death), the urine again contains blood, but is now highly alkaline, ammoniacal, and foul-smelling; during this stage the dropsical fluid also has a putrid odour. In each of the three stages, the secretion of urine is diminished; yet, occasionally, an increase in the quantity secreted takes place, but this is of short duration. During the

chronic stage the largest quantity is secreted, and the œdema also somewhat subsides; yet this is but temporary. In the first and last stages the quantity secreted is frequently very small, not exceeding a few ounces in the twenty-four hours, and generally contains a little blood.

In the first stage, the urine, which is red and turbid, deposits either a whitish sediment, leaving the fluid above clear and of a blood-red colour, owing to the hæmatosin dissolved in it, or blood-corpuscles appear also in the sediment and colour it; the presence of blood-corpuscles is by no means essential to the red colour of the urine, which is often due to the presence of hæmatosine alone. The urine may be either acid, neutral, or even somewhat alkaline, and has a low specific gravity. In the second stage, the urine, which is of a light yellow colour, and turbid, deposits, in greater or less abundance, a brownish sediment, which shortly becomes paler in colour; the urine is at this time acid. Later on, the urine is frequently very pale, whey-like, and deposits a white, finely flocculent sediment. It becomes ammoniacal on standing, more rapidly than does the brown urine; its specific gravity is very low. In the last stage of the disease, the urine is of a deep red colour, contains more or less blood, whilst the sediment which it lets fall is red or reddish-brown, and contains many blood-corpuscles; it is either ammoniacal when voided, or rapidly becomes so when left at rest; its density is greater than in either of the preceding stages.

In studying the microscopic characters of the sediments which occur in the urine of this disease, the ingredients of which these sediments are composed may be divided into two classes, the first of which comprises those ingredients which are constant, being never absent in the urinary sediment in this disease; whilst the second contains the occasional ingredients, those, namely, which are only sometimes found in the sediment. The constant ingredients in the sediment are—First, Pavement-epithelium: this occurs always in large quantities, and is especially abundant at the commencement of the disease, during which a copious white sediment often forms in the urine, composed almost entirely of pavement-epithelium. The cells of which the epithelium is composed usually differ somewhat from the normal form, being roundish oval, frequently almost round, with very distinct nuclei; occasionally the natural or more rhombic form occurs. Frequently the cells are peculiarly altered, being of considerable size, and containing two or three large nuclei and many smaller granules: they are also often shapeless, presenting membranous colourless shreds. Secondly, Epithelium from the tubes of Bellini: this epithelium is usually present in the sediment in very small quantities at the commencement of the disease (during which period the pavement-epithelium is most abundant) though it does sometimes occur in large quantities even in the first stage. This variety of epithelium appears in the form of longer or shorter colourless canals, which are provided with yellow or yellowish-brown nuclei of various sizes. The more of these nuclei or granules there are, the darker do they appear. In examining a portion of sediment for this epithelium, much care is requisite, since the tubes frequently contain very few brown granules, especially at the commencement of the disease, and are, consequently, so fine and transparent that they are apt to be overlooked. Thirdly, Albuminous fungi (Albuminpilze): these formations occur in the urine of Bright's disease as well as in all other kinds of urine and of other fluids which contain albumen. They are often very distinct, especially if the urine is alkaline: they occur in heaps of various sizes, and appear, in their first formation, like strings of pearls. When highly magnified, their origin from cells is rendered manifest. When very abundant in the urine, this fluid has usually a strong musty odour. Similar formations are also found in the fæcal evacuations of typhus, and of other forms of diarrhœa. Fourthly, Mucous globules: these are always present in greater or less abundance. Fifthly, Granule-cells, or imflammation-globules: these are especially found in the stage of congestion; they are frequently of a light-brown

colour, and often also colourless. Sixthly, Fat-globules: these are chiefly found in the chronic forms of the disease.

Of the occasional ingredients found in the urinary sediment in this disease are, first, Crystals of uric acid: they are mostly colourless, rhomboidal, or tubular; they occur even when the urine itself contains scarcely any traces of this acid. Secondly, Urate of ammonia: this occurs especially (though not exclusively) in the early stage of the disease. Thirdly, Pus: distinct pus-cells are sometimes seen in the latter stages of the disease; occasionally, also, in the earlier stages. Fourthly, Blue crystals of uroglaucin: they are seldom found in fresh voided urine, but frequently when the urine has stood for some time; they are often indistinctly crystalline, appearing like smooth, always blue, masses under the microscope. Fifthly, Crystals of the ammonia-phosphate of magnesia: these frequently occur when the urine is alkaline, and when it contains therefore, sixthly, Carbonate of ammonia.

In reaction, the urine in this disease is almost always acid. Inasmuch as this acidity is often very strong, even though no uric or hippuric acids are present in the urine, and as the more acid the urine is, the more uroxanthin does it contain. Heller believes that uroxanthin is the cause of the acidity. This is also probably the case in the urine of cholera. The presence of blood in the urine renders this fluid alkaline, though not if in small quantities only, such as is the case in the early stage of the disease; in the last stage the alkalinity is due also, in great measure, to the development of carbonate of ammonia.

The specific gravity of the urine in Bright's disease varies considerably, its amount depending on the degree to which the secretion of the urine is checked, on the quantity of albumen, and the quantity of blood present in it. In one case, Heller observed it to range from 1006 to 1048. In general the specific gravity is very low in the chronic stages. In order to judge of the actual specific gravity of the urinary secretion, the albumen or blood which it may contain should be coagulated by heat, and removed by filtering, previous to using the urinometer.

Of the various substances found in the urine in Bright's disease, and requiring some description, may be mentioned, first, uroxanthin. This substance occurs in solution as a yellow colouring-matter, and, as before stated, appears to be, either alone or together with uric acid, the cause of the acidity of the urine. It is invariably present in large quantity in the urine of this disease; consequently, the albumen, when precipitated by nitric acid or by boiling, assumes a violet colour, either immediately when thrown down, or after standing a short time. From this precipitated albumen, uroglaucin and urhodin may be obtained. Uroxanthin is also deposited with the sediment of the urine, especially if this fluid is alkaline.

Albumen is always present in the urine of Bright's disease, though its quantity varies considerably, sometimes there being scarcely a trace, whilst, at other times, even in the same case, the quantity is so large, that almost the whole urine becomes solidified on the addition of nitric acid. Towards the end of the disease the quantity is usually very small. In addition to what has been already said in regard to the presence of blood in the urine, it may be further observed that during the whole course of the disease, the urine, however pale it may be, contains a small quantity of hæmatosine dissolved in it; this is proved by the more or less brown colour which the albumen of the fluid has, when coagulated by boiling, separated, and slightly dried. Sometimes the albumen, before being dried, has a bright rose-red tint. The hæmatosine may also be extracted from the coagulated and dried albumen by cooling it in alcohol, slightly acidulated in sulphuric acid. With regard to urea, this substance is always present in very small quantity in the urine in this disease; frequently there is but a trace of it. Uric acid, as was before said, occurs largely at the commencement of the disease, and exists either as such or as urate of ammonia. In

the second and last stage it is usually either altogether absent, or is found in very trifling quantity. The extractive matters of the urine in this disease offer nothing peculiar. The salts are considerably diminished, both in their total number and in the quantities of each. This diminution is less marked at the commencement of the disease, but becomes more and more manifest as the disease progresses; frequently these ingredients are reduced to the smallest possible quantity. The chloride of sodium experiences the greatest diminution, being sometimes entirely absent. Next to this the earthy phosphates are most diminished, then the phosphate of soda, whilst the sulphates suffer very little diminution in their quantity.

The blood.—The general character of the blood in this disease may be briefly stated as follows:—Its density is considerably diminished, owing to the abstraction of a large quantity of albumen, the salts and other solid ingredients remaining almost, if not entirely, unchanged. It has a normal aspect, coagulates perfectly, and separates into clot and serum; the former of which presents nothing unusual. The serum is pale-coloured, and, owing to its deficiency in albumen, has a specific gravity much below the natural standard; it contains urea in very large quantity; is quite free from bile-colouring matter. There is nothing abnormal in the quantity of fibrine or blood corpuscles. The chief peculiarities of the blood in this disease therefore are—its low specific gravity, dependent on a diminished quantity of albumen, together with the presence of a large quantity of urea. The presence of urea in the blood is not, however, to be regarded as a condition peculiar to Bright's disease alone, for in cholera, and in ischuria generally, where the excretion of urine appears suppressed, it has been found in the blood in large quantities.

The dropsical fluid.—When carefully collected, the fluid of renal dropsy appears usually as a whey-like or pale yellow fluid, having an alkaline reaction and low specific gravity: it always contains albumen, although in a very small quantity, by which circumstance it may be generally distinguished from the fluid of other forms of dropsy, in which the quantity of albumen is usually large. It never contains the colouring matter of bile, which, however, is frequently found very largely in other dropsical fluids, especially in the fluid of ascites. When allowed to remain at rest for some time, the fluid often lets fall a little fibrine, in the form of a loose, gelatinous coagulum. In the small quantity of albumen which the fluid in this form of dropsy possesses, is found an explanation of the foul odour which is frequently noticed in this fluid, and which is caused by sulphuretted and phosphuretted hydrogen, generated through decomposition of the albumen, which contains sulphur and phosphorus among its elementary ingredients. It was noticed by Heller, that the smaller the quantity of albumen which a fluid contains, the more easily does its decomposition take place, and the sooner, therefore, does the putrid odour commence. Consequently, in other dropsical fluids, the foul odour does not so readily occur, for these fluids always contain a concentrated solution of albumen. Soda-soap (natron-seife), as well as nonsaponifiable fat, especially the former, always occur in the dropsical fluid in Bright's disease. These, with the epithelial particles, give to the fluid a milky opaline appearance. Salts invariably form essential ingredients in the dropsical fluid of this disease. Their total number is very large. Chloride of sodium is somewhat predominant over the rest; this salt occurs also very largely in the fluid of other forms of dropsy. The salts which are found in the dropsical fluids are, therefore, those which are wanting in the urine; instead of being retained in the blood when not secreted with the urine, they pass out with the fluid of dropsy.

It appears, therefore, from what has been said, that the contents of the urine, of the blood, and of the dropsical fluid, in this disease, bear to each other a certain definite relation. For example, the water which ought to be discharged in the form of urine, passes out in the form of dropsical fluid and is not retained in the blood; the albumen which is deficient in the

blood, is found largely in the urine, scarcely at all in the dropsical fluid: whilst the salts which are wanting in the urine are found entirely in the dropsical fluid; none of thosew hich ought to have been secreted with the urine being retained in the blood. *Med. Gaz, Aug.* 21, 1846, *p.* 317.

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51.—CHANGES INDUCED IN THE KIDNEY BY BRIGHT'S DISEASE.—By Joseph Toynbee, Esq.

[At a recent meeting of the Medical and Chirurgical Society, Mr. Toynbee read a paper containing the result of his researches into the nature of Bright's disease of the kidney: he adheres to the opinion advanced by Dr. Bright, that the changes induced in the organ are preceded by congestion. He showed that the arteries first become diseased, and that the tubuli, veins, and parenchyma, follow. Dr. Williams expressed his dissent from Mr. Toynbee's concurrence with Dr. Johnson's views on the pathology of this disease:]

He (Dr. Williams) not only did not consider that fatty deposit in the kidney to be the first stage of Bright's disease, but he could not admit that it is an essential part of the disease at all. Further, he would state as the result of careful microscopic investigation by Dr. Richard Quain, confirmed by his own examinations of numerous specimens, that the deposit in this disease is not confined to the uriniferous tubes, but appears on their exterior in the interstices between the vessels. This corresponds with the views which he had long held and published on the subject, that the deposit consists of albuminous matter like that effused from vessels affected with inflammation or a certain amount of congestion, and may, like such fibrinous effusions, present considerable varieties in its mechanical and chemical condition. This deposit mostly consists of granular matter; but the granules in one case are contained in cells, resembling exudation corpuscles rather than the proper epithelium cells of the uriniferous tubes, and are seen without the tubes as well as within them, and therefore cannot be a multiplication of these cells. The distinction may be further seen on contrasting a healthy kidney with one diseased; but here he begged to observe, that it is a rare thing to find a perfectly healthy kidney in the dead body in this metropolis. A change of structure, the extreme of which constitutes Bright's disease, is in slight degrees exhibited in a large majority of the kidneys of adults examined in hospitals. But if we contrast the healthy kidney of a young subject, we see in its beautifully regular, oval, nucleated epithelial cells, an appearance quite different from the large round granular cells which stuff the tubes, and block up the parenchyma in the early stages of Bright's disease. It is this stuffing and obstructing that interrupts the function of the kidney, and eventually alters its structure. In the more advanced forms of the disease, the granular matter is seen without its cell walls, and sometimes interwoven with filamentous tissue. The facts which he (Dr. Williams) would adduce against the notion, that the deposit is of fatty nature, are derived from its optical and its chemical properties. Although, occasionally, fat globules in considerable numbers may be seen in it, this is an exception rather than the rule. The granular matter, in some instances, is far less refractive than oil globules are: such, for example, as are commonly seen in the cells of the liver, as may be made obvious by comparing them in the same field. The chemical reaction of the matter also differs from that of fat, for the granules resist the action of caustic potash and of æther, separate or combined, whereas acetic acid partially dissolves them, a fact mentioned in the abstract of Mr. Busk's paper read to-night. He (Dr. Williams) was aware that Mr. Gulliver and others entertained the opinion that the molecular base of all nucleated cells is of a fatty nature, but that was a subject foreign to the present question, which was, whether or not the morbid deposit in Bright's disease is chiefly fat, like that in fatty degen-

eration of the liver. This question he would answer in the negative, and conclude, by the additional argument, that it is by no means low in specific gravity. *Med. Gaz., July* 3, 1846, *p.* 32.

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52.—CASE OF EXCESSIVE SECRETION OF EARTHY PHOSPHATES BY THE KIDNEYS, WITH LONG CONTINUED IRRITABILITY OF THE STOMACH.—By Dr. Golding Bird.

[This case, recorded by Dr. Bird, is an excellent illustration of the relation existing between the function of the stomach and kidneys. The patient, in 1841, was attacked with vomiting, after dinner, with severe pain at the pit of the stomach. This vomiting occurred after every meal for six months, being always preceded by intense pain, which was relieved as soon as the stomach was emptied. The next eight months the vomiting became less frequent, only recurring after dinner. He was admitted into Guy's Hospital, on the 9th of April, 1845. The following was his condition at the time:]

On admission into Guy's Hospital, the lad's complexion was pale and bloodless, with a slightly icteric tint; he was emaciated to an extreme degree, his bones being barely covered; and his face bore no small resemblance to a fleshless skull, over which a skin of parchment had been tightly drawn. His general appearance was that of a person worn out by malignant disease. He chiefly complained of a burning, gnawing pain, at the scrobiculus cordis, and of a heavy pain across the loins. Tongue clean and red: pulse quick and sharp; skin dry and imperspirable. He vomits shortly after each meal, bringing up his food slightly changed, and, according to his own account, has never passed a single day, during four years, without vomiting once, and more frequently several times. He complains of great thirst. The bowels act daily. Flatulent eructations frequent, and possessing the odour of stale fish. Urine copious, pale, loaded with crystals of the triple phosphate, not albuminous, alkaline; specific gravity 1·020, and evolving a disgusting fishy odour. The abdomen is distended with flatus; there is some tenderness at the scrobiculus cordis, where no tumor is perceptible. He had, shortly after his admission, vomited nearly four pints of thin, acid, yeast-like matter.

Misturæ magnesiæ, ℥j. ter in die. Milk diet.

April 11th.—Has vomited daily after dinner, the vomited matter presenting the same yeast-like appearance. Urine has an ammoniacal odour, and deposited crystals of phosphates.

℞. Strychniæ, gr. j. Acidi nitrici dil, ℥j. Aquæ ℥xij. Solve et sumat æges, ft. ℥j. ter in die.

He was strictly confined to milk diet, consisting of 18 ounces of bread, an ounce of butter, and two pints of milk daily, and ordered to take the medicine fifteen minutes before each meal.

[On the 16th, a liniment of croton oil was applied to the scrob. cord., after which he ceased to vomit; the pain also ceased, the urine became neutral, and contained but few phosphatic crystals. On the 22d, the urine was free from deposit, and the skin acted freely. Dr. Bird adds:]

From the date of this report the same treatment was continued and the patient steadily improved; the vomiting ceased, the urine became acid, he recovered his flesh—indeed became decidedly fat; it was scarcely possible to recognise in him the wretched skeleton admitted but a month before. On May 19th, he suffered a slight relapse both of pain and vomiting, following a severe paroxysm of pains in the region of the left kidney, and relieved by a copious discharge of urine loaded with triple phosphate, and rapidly becoming alkaline and fœtid. He appeared to recover from this in a few hours, and left the hospital strong enough to attend to his work, and apparently well; having continued the strychnia during six weeks, and taken altogether about eleven grains of that alkaloid.

This case presents several points worthy of attention, both in connection with its diagnosis and treatment. The general history of this lad, his emaciated and care-worn appearance, would have induced me to have referred the origin of the extraordinary irritable condition of the stomach to some organic disease of that viscus, and had an epigastric tumor been detected, there would, notwithstanding the youth of the patient, have been but little to prevent the diagnosis of pyloric disease. In the latter disease, as well as in such cases of ulceration of the mucous membrane of the stomach which I have had an opportunity of examining, the urine has never presented the appearance of that secreted by the patient under consideration. Indeed, so far from being remarkably copious, the secretion has been generally found to be rather scanty, and instead of being pale and whey-like, has possessed a deep brown or red tint, and in the majority of cases has deposited urate of ammonia, more or less deeply stained with purpurine.

The connection of alkaline urine with blows or other mechanical injuries inflicted upon the spine is now generally recognised, and every one is familiar with the almost constant presence of phosphatic deposits as the result. But I am not aware of attention having been previously directed to the connection of this condition of urine, and attending diuresis, with intense irritability of stomach, or, at all events, of their standing to each other in the relation of cause and effect. I may venture to express my own conviction of the etiology of the case in a few words. A lad of delicate frame is engaged in laborious occupations, often far beyond his strength for years, during that part of life which is most susceptible to marked influences; functional derangement of the spinal marrow ensues, marked by the pain across the loins, and altered state of the urine. The stomach thus rendered irritable scarcely retains food, emaciation results, the patient is unable to obtain a sufficient supply through the medium of the stomach for the sustenance and reparation, much less for the increase of tissue. The necessary result is, his stunted growth, extreme emaciation, and the excretion of an unhealthy fluid from the kidneys, the necessary result of the impaired condition of the vital chemistry of these organs, itself an almost constant, although often transitory, result of the slightest mechanical injury to the spine.

I may remark, that I several times made a careful analysis of the urine with the especial view of detecting hippuric acid, but in no instance was I successful in detecting it. This examination was made in consequence of some general resemblance existing between the character of the urine in this case and some published on the continent, in which the presence of the acid alluded to was remarkable.

The strychnia was administered in consequence of its well-known influence upon the functions of the spinal marrow, and believing that where alkaline urine is really secreted as such by the kidneys, independently, of course, of the character of the ingesta, there is always some lesions of that important structure. Its effects was certainly most satisfactory, for, after years of almost incessant vomiting, the patient soon acquired the power of retaining his food, the urine slowly losing its alkaline character. I would, indeed, venture to press this important remedy upon the notice of surgeons, to whose province cases of alkaline urine following injury to the spine more immediately belong; for, although not prepared to state anything approaching to a belief of its infallibility, I would still express an opinion that in many cases where especially there is no serious organic mischief, the strychnia would be more successful in relieving the distress attending upon the chemical changes going on in these cases, in the urine after secretion, than any other remedy with which I am acquainted. Nor can I avoid here taking the opportunity of alluding to the value of the drug in the distressing vomiting so frequent in uterine affections, especially in the irritable stomach of hysteria, in which it is almost always successful as an important palliative.

Postscript.—Since the above was written, three other cases, similar to the one now detailed, have fallen under my notice. In all three the urine was loaded with crystals of triple phosphate, and presented the pale whey-like color noticed in this case. I suspect that the irritable state of the kidneys depending upon, or, at least, coincident with, the abundant secretion of phosphates, will be found a not uncommon cause of protracted nausea or vomiting. *Med. Gaz., July* 10, 1846, *p.* 62.

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53.—PERICARDITIS, WITH RENAL DISEASE.—By JOHN TAYLOR, M. D., &c.

[The patient in this case had been exposed to rain, and had endured abstinence for a good many hours, and on the following day suffered from chilliness, attended with cramp in the legs and fore-arm. He had pain between the shoulders, and a feeling of weight in the chest; breathed with difficulty, and lay in bed with his legs drawn up. He continued in this state seven or eight days, occasional incoherence and delirium taking place. The urine was very scanty and high-colored; he was exceedingly restless, and seldom slept. The morning of the day he was admitted into hospital he had a convulsive seizure; the belly was alternately contracted and relaxed; the jaws clenched and the teeth ground together; foam issued from his mouth, and the head was dropped forwards. On his admission, he was quite unconscious. He began to be unruly, and was very delirious, but in a few hours he vomited a quantity of undigested food, oranges, potatoes, pudding, &c., after which he became more sensible, and could answer questions rationally. A cursory examination of the heart was made, and no palpitation detected; he passed twelve ounces of pale urine, having a greenish tinge, faintly acid, sp. gr. 1011, and leaving a slight whitish powdery deposit. One fourth of its volume of albumen was thrown down on the addition of heat and nitric acid. All the symptoms persisted, and the patient died in two days. Dr. Taylor observes:]

Prior to the occurrence of the head symptoms, nothing appears to have happened that could have led to suspicion that any renal disease existed. There was no obvious emaciation nor deterioration of the general health. The characters of the urine were such as are common in Bright's disease, and the case therefore shows the importance of testing the urine in all cases of disease which come before us, and the important light which such a practice is calculated to throw over many otherwise obscure diseases.

There was no œdema whatever, although the renal disease was so considerable. A main reason of this was, no doubt, the absence of any considerable permanent obstacle to the circulation through the lungs or heart.

The symptoms referable to the nervous system, besides the distinct epileptic convulsions, were, frequent cramps in the legs and arms, delirium, confusion of mind, and, lastly, stupor, ending in fatal coma. All these symptoms are such as have been proved by ample experience to arise in many cases of Bright's disease. They appear to be induced by the accumulation of deleterious matters in the blood, consequent on the imperfect action of the kidneys. In many such cases, chemical analysis has proved that an excess of urea is present in the blood, whilst no morbid appearance can be detected within the head. Similar symptoms are likewise produced by extirpation of the kidneys in the lower animals. In this case, the brain was unusually pale; there was rather more serum under the membranes than in health, but not so much as is found in many fatal diseases without head symptoms. These were the only morbid appearances in the head, and they were simply those of anæmia, the consequence of the deficiency of the coloring matter of the blood, to which Bright's disease gives rise. Such cases, by establishing the connexion between certain symptoms and a poisoned state of the blood, help to illustrate other and analagous cases, in which the same or a different poison is mixed with the circulating fluid.

Many cases of "serous apoplexy" and of the "simple apoplexy" of Abercrombie have probably been cases of Bright's disease, in which the state of the kidney has been overlooked. The delirium, pain, stupor, coma, and occasional convulsions, in cases of typhus, viewed in connexion with the fact established by Louis, that the appearances in the head are the same in such cases, as in the cases without severe head symptoms, must be referred to the circulation of deleterious matters (in this case, however, of another kind) with the blood. Yet how frequently, even now, are such symptoms considered to arise from inflammation of the brain, and the treatment directed accordingly.

In what relation do these nervous symptoms stand to the pericarditis? Cases have been recorded by Mr. Stanley, and Drs. Abercrombie, Latham, Rostan, Andral, Bright, and others, in which, during life, a variety of severe nervous symptoms existed, and, after death, the brain and spinal cord were found to all appearance healthy, and no other disease was observed to which the symptoms could be ascribed, except acute pericarditis. A number of these cases has been collected by Dr. George Burrows, in one of the Lumleian lectures for 1843, and the account is published in the London Medical Gazette for May 26, 1843. In some of them there were "all the usual symptoms of inflammation of the brain and its membranes;" in two cases symptoms of mania and dementia; in others, apoplectic and epileptic symptoms; in others symptoms of tetanus and trismus, or of aggravated chorea and hysteria. In all, the pericardium was acutely inflamed; in a full half of them with rheumatism, and in the rest without rheumatism; and in all the fatal cases, the brain and spinal cord were substantially healthy. The generally received explanation of such cases hitherto has been this—that the nervous symptoms are sympathetic, the inflamed pericardium being a source of irritation, the influence of which is transmitted to the nervous centres, and in the cases attended with convulsive movements, reflected upon the motor nerves of various parts.

The case before us shows that a different explanation of some of these cases may be suggested, and supported, I think, with at least an equal amount of evidence.

1. There had been cramps in the legs, and occasional loss of memory, and double vision, before the pericarditis appeared; this disease, therefore, could not be the cause of the symptoms in question.

2. The coma and other recent nervous symptoms would all have been referred, without hesitation, to the renal disease, if no pericarditis had been found.

3. I have elsewhere (Medico-Chirurgical Transactions, vol. xxviii.) attempted to show that the mass of cases of non-rheumatic pericarditis is due to renal disease.

4. I believe that it will be found that a large proportion of cases of non-rheumatic paricarditis is quite latent, in the ordinary acceptation of the term, and also that the mortality is much greater than among the cases of rheumatic pericarditis.

I therefore regard the coma and the pericarditis, in this case, as the common effects of the renal disease, and believe them to be altogether independent of each other. I further believe it to be probable that the pericarditis and the nervous symptoms stand in the same relation to each other in a certain proportion of the published cases referred to. One or two particulars may be pointed out, either confirmatory of this view or consistent with it.

1. In no one of the cases, as collected by Dr. Burrows, has the state of the kidneys been expressly mentioned after death, or the presence or absence of albumen in the urine been noted during life. In several of them, indeed, it is stated that there was no morbid appearance in any other organ than the pericardium, but all who are practically acquainted with the way in which bodies are inspected, and the appearances recorded, will know

that such a statement affords hardly the least proof that the kidneys were even seen, much less that they were so examined that they might be pronounced healthy.

2. The mortality was twice as great in the non-rheumatic as in the rheumatic cases, in which respect the two classes resemble, respectively, cases of rheumatic and renal pericarditis.

3. All the cases with apoplectic symptoms occurred among those without rheumatism; and one of the patients is stated to have had general decay. One of the rheumatic cases, ended in coma. Two of the three tetanic cases belonged to the non-rheumatic class.

From this comparison, therefore, between my own cases of "renal pericarditis" and those of non-rheumatic pericarditis, I think there is much probability in the supposition that the kidneys were diseased in some at least, of the cases of the latter class. I have already detailed one case of trifling convulsive movements in connection with rheumatic pericarditis, and without renal disease (case 9.), and I am disposed to consider the movements in that case (and therefore in many other and similar cases) as sympathetic of the pericarditis. In the same way more extensive convulsions, resembling those of chorea, or epilepsy, or tetanus, may be sympathetic, but in these cases it seems desirable that further evidence of the absence of other and sufficient causes, especially renal disease, should be adduced. This further evidence is still more needed in cases in which there is observed great or long-continued delirium, or coma, or genuine apoplectic symptoms. We are familiar with other examples of simply convulsive movements, and even extensive and violent ones, arising from reflected irritation, but we are scarcely equally familiar with cases in which well-marked apoplectic symptoms spring from the simple transmission of an irritating influence from some remote part, through the nerves to the brain. This is a kind of argument, however, upon which, in any case, I am not disposed to place much reliance; and in respect to the symptoms under consideration, numerous examples, both of epilepsy and of hysteria, show that coma may arise without either structural disease of the brain or any known alteration in the blood.

4. The epilepsy which this patient had earlier in life must of course have been independent of the renal disease, but it would probably operate as a predisposing cause of the fits which occurred during the last illness.

[Many of the symptoms in the early history of the case might be referred to the pericarditis, although after his admission into the hospital, nothing occurred to direct attention to the heart. The sounds certainly were not quite healthy, but there was no distinctly developed murmur or friction sound; this depended, doubtless, on the copious liquid effusion. After death, the heart was found enlarged to nearly double its average weight, the enlargement affecting the left ventricle. The exciting cause of the pericarditis was exposure to wet, but the principal cause was probably the renal disease, by interfering with action of the skin, and further impairing the functions of the kidneys, the blood would be rendered still more impure. In many cases of renal disease, pericarditis comes on without any additional cause. Dr. Taylor makes the following note of the treatment.]

*Treatment.*—On the first day, before the state of the urine was known, and whilst the nature of the cerebral affection was considered doubtful, the patient was cupped over the nucha, and a brisk purgative ordered. As soon as the urine was known to be albuminous, I considered the cerebral symptoms to arise from Bright's disease, and I ordered elaterium, in quarter-grain doses, to be frequently repeated. This was prescribed with the view of producing copious watery evacuations, which I have found to relieve the stupor in various cases of a similar kind. None of the medicines, however, acted upon the bowels, and the patient died the second day after admission. *Lancet, May* 16, 1846, *p.* 539.

54.—TREATMENT OF GLUCOSURIA (DIABETES.)—By M. BOUCHARDAT.

[For a number of years, M. Bouchardat has been engaged in the study of the pathology and treatment of diabetes, and the numerous facilities he has enjoyed, being *pharmacien en chef*, at the Hotel Dieu, at Paris, render the results of his researches of the utmost practical importance.]

The first element and basis of M. Bouchardat's treatment of glucosuria is, the exclusion from the diet of all substances capable of conversion into glucose. At first, in all the enthusiasm of a discoverer, he thought that this alone was sufficient; but he soon found that the means of cure are by no means so simple, and that they really embrace attention to a great number of minute particulars, the influence of which requires to be united, and carefully continued for a considerable length of time, in order to produce the desired effect.

*Diet.*—All farinaceous substances and their compounds, or those into the preparation of which starch in any way enters, must be most strictly prohibited. In enforcing this prohibition the greatest address is required, as the longing of the patient for such articles is very great; and it is above all things essential to successful treatment, that disgust for food, and consequent anorexia, should if possible be avoided. To satisfy the cravings for feculent substances, M. Bouchardat has invented a kind of bread, containing nothing that is convertible in the stomach into glucose. The mode of preparing this gluten bread is given below* and of its value in the treatment of diabetes we have ourselves seen several very striking proofs in the practice of medical friends.

Animal food of all kinds, as well as eggs, milk, butter, and cheese may be freely used, subject to the usual restrictions as to digestibility, &c. The following vegetables are also proper to form a part of the diet of a diabetic patient:—spinage, endive, lettuce, sorrel, asparagus, haricots verts, cabbage of all kinds; the last may be very usefully combined with fat pork or salt bacon. Cresses of every kind, dressed with a large proportion of oil and hard boiled eggs. A very agreeable and useful dish may also be prepared from fresh gluten, carefully deprived of starch, and combined with butter, and some kind of cheese grated. The dessert may be composed of olives, almonds, filberts, and walnuts. The following may also be allowed from time to time, but always in a very moderate quantity, viz., apples, pears, cherries, currants, gooseberries, strawberries, raisins, and pine-apples.

*Drinks.*—Great importance in the treatment is assigned by M. Bouchardat to a proper selection of alimentary drinks. Theoretically, he regards spirituous liquors as belonging to the same category as oil and fecula, viz., ministers to respiration; and by a judicious combination of the two extremes, oil, which burns away slowly, and alcohol which is rapidly consumed, to obtain the effect of the intermediate substance, fecula. Experi-

* *Gluten Bread.*—The gluten is best obtained by the process of M. E. Martin: 40 parts of water and 100 of fine flour are worked into dough, as in making bread, and then laid aside for about half an hour in summer, or an hour in winter, in order to allow time for the water to combine with the flour. The dough thus prepared is laid on a fine metal sieve, on which several fine streams of water are playing from a vessel suspended above, and being thoroughly worked with the hand, as in baking, until the water flows off uncoloured; the starch may be collected in the washings, and gluten to the amount of about one-fourth the weight of the flour employed will remain on the sieve, though of course the quantity varies with the nature of the flour. The gluten to be made into bread must be fresh prepared, as it begins to alter in a few hours. It is mixed with one-fifth of its weight of the finest flour, and kneaded for a very long time with the proper proportion, of salt and leaven by which a very light and elastic bread, without odour, and very agreeable, is readily formed.

Gluten bread is highly nutritious; and, in addition to its use in the treatment of diabetes, has been found of the greatest value in those cases of dyspepsia, gastralgia, or whatever else they may be called, in which the simplest aliment is found to sour upon the stomach, giving rise to acid eructations, and epigastric constriction."

ence proved that stimulants in moderate quantities are useful; but that they require much discrimination and very careful management. The red French wines, such as those of Bourgogne and Bordeaux, which have a certain degree of astringency, he has found to answer best; and of these he administers about a pint in the twenty-four hours. It is sometimes necessary, but under peculiar circumstances, to increase the allowance of wine to three or four times this amount; but the least approach of inebriation is always injurious. A patient of our friend, Dr. Hunt, who has been remarkably relieved by M. Bouchardat's mode of treatment, and who is still under Dr. Hunt's care, is invariably rendered worse by even a single glass of wine; and the same circumstance was observable in another case that we had under observation for some weeks.

Beer and all the saccharine liquors have been found injurious, as might be supposed; and, if used at all, should be taken very sparingly indeed. Coffee is useful to almost all diabetic patients, and should be taken without sugar, or the quantity of the latter ingredient must be very small indeed. Lemonade, and the other cooling drinks, giving but temporary relief to the thirst, are in this respect, no better than pure water, and are decidedly injurious.

*Clothing* ranks next to diet among the means of curing glucosuria. The whole body must be protected from sudden chills, and the insensible perspiration must be encouraged by being clothed in flannel.

Exercise, carefully regulated, and progressive, so as to avoid too great fatigue, and of such a kind—gymnastic exercises or manual labour, for instance—as is accompanied with pleasure, will, in all cases, be found of very great service in promoting the cure.

Baths have not been found by M. Bouchardat of much general utility. Tepid baths are occasionally useful, when there is no danger of the patient catching cold; and swimming baths, especially in the sea, when they can be borne at all, are often attended with the most rapid and beneficial results.

Medical Treatment in glucosuria, though useful and never to be neglected, can only be considered as subsidiary to the other means employed.

Carbonate of ammonia M. Bouchardat has found of very great utility; but its use should always be united with the constant wearing of very warm clothing, or the medicine passes off by the kidneys, and gives rise to an alkaline state of the urine. It is exhibited in the following combination: Carbonate of ammonia, 77 English grains; rhum, 310; water 1550. One-third to be taken half an hour before each meal. Or it may be prescribed in the form of a bolus, each containing eight grains of the carbonate, with an equal quantity of the theriaque; from two to ten to be taken each night on going to bed. M. Bouchardat was unable to determine whether, in glucosuria, the ammonia acts as a stimulant or a diuretic, or what is the mode of its action; but of its efficacy, in the treatment of rebellious cases, he has fully satisfied himself.

Vichy Water has, in some cases, treated by MM. Jadioux and Bouchardat, been found of very decided efficacy. The alkaline bicarbonates generally, and especially that of soda, have been very highly recommended by MM. Contour and Mialhe. The latter gentleman, indeed, places his chief reliance on alkalies given in some form; and he has brought before the Academy, at different times, cases of glucosuria successfully treated by that means almost alone. M. Mialhe is, however, so very exclusive in his chemical notions, if we may judge from the work that he has published, that we fear his chemical observations must be very much modified by his chemical enthusiasm; and that his notions of what ought to take place will, as often happens with the greatest men and the most would-be-impartial observers, make him very blind to the real facts, and most ready to adopt as proofs what are really very far from being such. Besides being found by M. Bouchardat (whose extensive experience in diabetes renders every observation of his on this subject of very great weight) very much inferior in

therapeutic efficacy to the carbonate of ammonia, MM. Honore and Gueneau de Mussy have found it in some cases actually injurious.

Dover's Powder and Opiates.—Every practitioner has experienced the benefit of these medicines in some cases, as palliatives, though many regard them as capable alone of effecting a cure. M. Bouchardat employs them only as diaphoretics. Morphia, or pure opium, he never prescribes in diabetes, lest the stomach should be put out of order; but Dover's powder, in doses of ten or twelve grains at bed-time, he has found most efficacious; though, of all the opiates, he regards the theraica (divina) as that from which by far the most favourable results have been obtained. He gives this preparation, the absurd complexity of which he does not pretend to be able to reform, in doses from half a drachm to a drachm every evening. The last-mentioned quantity contains about one grain of crude opium.

Chalybeate and Tonic Remedies.—When the pallor and other symptoms give the case a great similarity to chlorosis, the tonic bitters, alone or combined with iron, will be found of much therapeutic value. The preparation of iron most valued by M. Bouchardat, viz., the pulverized iron, or the metal reduced by hydrogen, has been but recently introduced into this country; but if the price could be rendered more moderate, we have no doubt that it would speedily become a general favourite with physicians.

Common Salt was formerly regarded by M. Bouchardat as a useful remedy from the diminution of thirst which diabetic patients experience after partaking of salt meats; but, although, under such circumstances, the quantity of glucose passed also diminishes, no permanent or decisive benefit has been obtained from the employment of this means of treatment.

Evacuants.—M. Bouchardat commences his treatment by the administration of an ipecacuanha emetic, followed by a purgative to free the bowels of anything injurious that may be detained there; but he finds evacuant medicines, though so highly recommended by authors, of no real use afterward, except to combat particular symptoms.

In speaking of digestion, he mentioned that certnin substances have been found at once to put a stop to the action of diastase, and it is curious that these are chiefly the very medicines which have been most highly vaunted, by the older authors, as the proper remedies for diabetes. They have all, however, been found of little or no real value, except where, being unable to submit the patient to any regular treatment, we seek only to procure a temporary relief; the remedies of this class are lime water, calcined magnesia, alkalies, nitric, phosphoric, and sulphuric acids, alum, tannin, and the other astringents.

Bleeding is the last therapeutic means we have to consider. General bleedings have been recommended by a long list of writers, from Aetius downward; but M. Bouchardat has found them, as indeed might have been expected, invariably injurious. Abstraction of blood, by leeching and cupping, from the epigastrium, as recommended by Sir H. Marsh, Bardsley, Forbes, &c., from the loins, as advised by others, and from the anus, when the appearance of the disease has coincided with the suppression of hæmorrhoids, has been occasionally had recourse to by Bouchardat, and often with benefit.

In concluding our abstract of the researches on the theory and treatment of saccharine diabetes, we would repeat the caution so often given by M. Bouchardat, that the practitioner is to place his chief reliance on the dietetic and hygienic means advised; and that it is from a combination of favouring circumstances, and not from any one single means that any decided benefit is to be obtained. For ourselves, having had several opportunities of seeing patients treated successfully on the above rules, both by M. Bouchardat himself, and by other practitioners, we feel convinced that whatever may be the truth of the theory, the practice is, in very many cases, the best that can be pursued.

*Dublin Quarterly Jour. of Med. Science, Aug.* 1846, *p.* 281.

55.—A TABLE OF URINARY DEPOSITS.—By Ray Charles Golding, M. D.

*Lithates.*

1. Urine, white, yellow, red, or pink.
2. Of acid re-action.
3. Clarified by heat.
4. Is soluble in alkalies.
5. Dissolves in nitric acid with effervescence.
6. Solution in alkalies precipitated by acids.

*Phosphates.*

1. Urine feebly acid, neutral, or alkaline, when tested with litmus paper.
2. Is soluble in weak acids.
3. Deposits unaffected by heat.
4. Deposit of phosphate of lime, amorphous; urine of high specific gravity, unaffected by caustic potash.
5. Deposit of mixed or fusible phosphates; urine of low specific gravity, easily becoming putrid.
6. Triple phosphates: deposit crystalline, and soluble in acetic acid.

*Oxalate of lime.*

1. Urine mostly neutral, sometimes fully acid, or alkaline; specific gravity about 1020.
2. Is transparent, of a pale citron or greenish hue, and free from sediments.
3. Insoluble in acetic acid and in warm dilute nitric acid.
4. Oxalic acid set free by boiling with sulphuric acid (!)
5. Alkaline efflorescence of carbonate of lime before the blowpipe, reddening moistened turmeric paper, if sufficient deposit can be collected: carbonic acid and carbonic oxide gases being at the same time evolved.

*Cystic Oxide.*

1. Urine greenish yellow, and as the phosphates generally co-exist with the cystine, it has a peculiarly fœtid smell.
2. Is deficient in urea and lithic acid; specific gravity about 1020 or 1022.
3. Is rare in man, but prevalent in the canine and feline races.
4. Soluble in acids, fixed alkalies, and their carbonates.
5. Insoluble in alcohol, water, carbonate of ammonia, and nearly so in acetic acid.
6. Will not combine with the acetic, tartaric, or citric acids.
7. Soluble in caustic ammonia, but re-precipitated by acetic acid.

*Sugar. (Grape).*

1. Saccharine urine peculiar to man.
2. Urine clear and green, unless the lithates or phosphates are accidentally present.
3. Average specific gravity 1040; but may range from 1025 to 1055.
4. Has a sweet taste, a vapid odour, and readily ferments.
5. Trommer's test (Berlin, 1841): sulphate of protoxide of copper and liquor potassæ; a brown sub-oxide of copper is precipitated on boiling.
6. Growth of Torula (ovoid) at 70° F., and vinous fermentation with yeast at 80° F. (Christison).
7. Ronge's sulphuric acid test: carbon deposited.
8. Rich brown when boiled with an equal weight of caustic potash (Moore).
9. Hunefield's chromic acid test: bistre brown colour produced by exposure to bright solar light.

*Albumen.*

1. Specific gravity 1024, 1020, 1013, or lower.
2. Coagulated by heat and nitric acid, if no redundancy of lithates or phosphates exist.

3. If coagulum fragile is indicative of a chilous origin, and as such coagulates spontaneously, and contains blood discs.

4. Deposit of lithates equally well produced by nitric or muriatic acid; not so albumen.

5. Lithates dissolved by a gentle heat (about 70° F.); albumen coagulated at 157° F.

*Pus.*

1. Forms a greenish yellow pulverulent deposit, closely resembling the phosphates, which becomes mucoid and tenacious on the addition of caustic potash.—(Babington).

2. Pus-globules and sometimes oil-globules seen under the microscope.

3. Urine supernatant on the purulent deposit usually clear.

4. Renders urine acid, with no tendency to become alkaline.

*Mucus.*

1. Urine muddy and alkaline, does not contain oil-globules.

2. Urine contains phosphate of lime and triple phosphates in abundance.

*Bile.*

1. Colouring matter insoluble in water.

2. Stains linen permanently reddish brown.

3. Precipitated green by muriatic acid.

4. Nitric acid produces a greenish tinge, soon passing to red, blue, violet, and pink.

5. Soluble in caustic potash.

*Xanthic Oxide.*

1. Urine very similar in appearance and reaction, to lithic urine.

2. Yellow hue produced by nitric acid, and a reddish one by caustic potash.

*Urea.*

1. Urine of high specific gravity.

2. Crystal of nitrate of urea, produced by the addition of nitric acid to the urine and exposed to cold.

*Blood.*

1. Blood discs seen under the microscope.

2. If much blood be present the urine will be albuminous.

3. A light red colour sometimes produced on the addition of common salt to bloody urine. *Med. Gaz., May* 15, 1846, *p.* 854.

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56.—URINARY DEPOSITS, WITH THEIR CHARACTERISTICS AND TESTS. —By W. Proctor, Esq., York.

I.—Coloured.

(A.)—*Crystalline*, which is *uric acid*, characterized by having the rhombic form, or that of square tables; soluble in nitric acid by heat in effervesence, which, on evaporation, leaves a beautiful pink deposit (mureid of Liebeg), becoming purple on the addition of ammonia; soluble in a boiling solution of potassa, from which hydrochloric acid precipitates it as a white gelatinous substance, speedily becoming crystalline. Before the blowpipe blackens and dissipates with a peculiar animal odour.

(B.)—*Amorphous*, which may be

1. Pink, red, or yellow *urate of ammonia:* is soluble in hot water, and again deposited on cooling; soluble in boiling solution of carbonate of potassa; boiled with solution of potassa, evolves ammonia; has all the characters of uric acid with nitric acid. Before the blowpipe comports itself as uric acid, except that it gives out ammonia and decrepitates strongly.

2. Red or brown blood.—Urine becomes opaque by heat or nitric acid.—Microscope detects the blood discs, which often subside, and form a distinct layer at the bottom of the vessel; chloride of sodium, and other neutral salts, heighten the colour.

3. Green or brown bile.—If, from the brown colouring matter (biliphocin), on addition of nitric acid, the urine becomes blue, then green, afterwards violet and red, and lastly assumes a yellow or yellowish-brown colour; if in small quantity, the intermediate colours are not observed; hydrochloric acid changes the urine to green. If from bilin, this may be detected by Pettinkofer's test.

II.—Colourless.

(A.)—*Crystalline*, which may be

1. *Oxalate of lime.*—Octohedral or quadrilateral crystals; insoluble in acetic acid, soluble in nitric and hydrochloric acids; boiling with carbonate of potash; forms soluble oxalate of potash and insoluble carbonate of lime; the former gives characteristic reactions with chloride of calcium, sulphate of copper, and nitrate of silver. Before blowpipe becomes carbonate of lime; on continuing the heat, lime only is left, giving out heat on the addition of water, and browning turmeric paper.

2. *Phospate of ammonia and magnesia* (triple phospate), right rectangular or trilateral crystals; soluble in diluted mineral and acetic acids, from which, by an addition of ammonia precipitated in a crystalline form; soluble in boiling solution of potassa, with evolution of ammonia. Before the blowpipe gives off ammonia, and runs into a white enamel, addition of phosphate of lime imparts ready fusibility.

3. *Cystine* in simple or compound tables; insoluble in boiling water, soluble in ammonia (with odour of sweet brier) and alkalies, and precipitated by acetic acid; insoluble in alcohol, tartaric and oxalic acids, and bicarbonate of ammonia.

(B.)—*Amorphous* may be

1. *Phosphate of lime.*—Readily soluble in dilute hydrochloric and nitric acids, sparingly in acetic; precipitated by ammonia in an amorphous condition, forming, when collected on a filter, a horny mass; oxalate of ammonia in these solutions gives a white precipitate. Before the blowpipe, first black and then white, leaving an ash, which is neutral.

2. *Urate of ammonia.*—Characters as above. (Coloured B.)

Pus.—The microscope detects pus-globules. The urine coagulates more or less by heat; soluble in solution of potassa, forming a tenacious glairy fluid.

Mucus.—Insoluble in potassa; imparts little or no albumen to the urine, therefore, slight or no coagulability by heat, &c.

*Pettinkofer's test.*—Add to the urine, by drops, two-thirds of its volume of sulphuric acid, keeping the mixture below 144°; add a few drops of a solution of cane sugar (one to five of water), and shake the mixture, when, if bilin be present, a violet red-colour will be developed.

*Lancet, July* 18, 1846, *p.* 68.

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57.—INFLUENCE OF THE RHUBARB PLANT IN PRODUCING OXALATE OF LIME IN URINE.—By H. Wilson, Esq., Runcorn.

[The oxalate of lime in urine, can only be considered diagnostic of disease, when the oxalic acid is known to have been generated within the economy, and not introduced from without, for, says Liebig, the analysis of urine, when made without respect to the inorganic salts, acids, and bases of the aliment, teaches nothing. Are there any kinds of food which may be the means of impregnating the urine with oxalate of lime? Dr. Wilson says:]

The young stalks of the rhubarb plant, which of late years have come into such general use in this country for tarts in the spring, and sorrel, of which our neighbours, the French, consume a good deal in salads and in other ways, both contain oxalic acid; and hard water contains lime. Dyspeptic persons who drink such water, and eat such articles of food, and are

thus daily introducing, without suspecting it, the constituent ingredients of the mulberry calculus, are very likely indeed to incur the pain and the exceeding peril of a renal concretion of that kind. You must see, therefore, the great importance of detecting the oxalic diathesis, and of forbidding, to those who have it, all such viands as contain the oxalic acid, and of recommending them to use pure water, even distilled water for drinking.

[And it appears that the oxalate was found in three out of four after eating rhubarb; it disappeared in two after the second day, continued daily in the third, whilst on the fourth no trace could be found; but what is singular, is, that it was found after the discontinuance of rhubarb a week, and the crystals were as large and numerous as when first tested. The following are the conclusions which appear fairly deducible from the experiments of Mr. Wilson:]

1. That, in a great proportion of instances, oxalate of lime will be present, for a longer or shorter period, in the urine of persons using the rhubarb plant as food.

2. That there are, on the other hand, some individuals in whose urine no oxalate can be detected during such use of a rhubarb diet.

3. That a rhubarb diet is capable of inducing the oxalate diathesis in individuals predisposed to it, or to the diseases characterised by it; and that it must, therefore, necessarily tend to exasperate and prolong such diathesis, when it already exists.

To these the following corollary may be added:—That the presence of oxalate of lime in urine should not be disregarded by the practitioner, from the supposition that it may originate in articles of food, but should, under any circumstances, be considered indicative of the oxalic diathesis, or of a tendency to it not less important.

It is generally supposed that the stomach has the power of decomposing the vegetable acids. In the common saline draught, for example, it is believed that the tartaric or citric acid undergoes decomposition, leaving the alkaline base at liberty to form other and beneficial combinations; but, from the fact of these and many other of the organic acids; for instance—the malic, succinic, gallic, acetic, oxalic, and meconic, having been detected in urine, though introduced into the stomach in a free state, it is obvious that the power of decomposing them possessed by the stomach cannot be uniformly exerted. We may hence account for the presence of oxalate of lime in urine, on some occasions, by supposing oxalic acid introduced with the food, to pass the ordeal of the digestive powers intact.

*Prov. Med. and Surg. Journal, Sept.* 2, 1846, *p.* 413.

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58.—SILICEOUS GRAVEL.—By Dr. VENABLES.

[In Retrospect, Vol. XIII., Art. 70, will be found an account of a small portion of siliceous gravel extracted from the urethra. Lime appeared to be its predominating principle, but the mass was so small, that nothing could be determined as to its chemical composition. Dr. Venables has, however, since had the entire calculus placed at his disposal, and has given us the following account of it.]

The entire calculus weighed exactly four grains and a quarter; it had a tuberculated appearance, and a colour exactly like the mulberry variety. Its tuberculated surface somewhat convex, the opposite one slightly concave, as if a laminated fragment detached from a small nucleus. There were observed, with a lens, two or three glistening or sparkling points, caused possibly by imbedded crystals, probably octohedra of oxalate of lime, but this could not be satisfactorily determined. There were likewise observed one or two points of a more opaque appearance, resembling quartz or dark flint. Two or three of these were observed interspersed through the substance of the fractures. A small fragment, heated on platinum foil

over the spirit lamp, swelled up, the intumescence becoming nearly black, but ultimately leaving behind a whitish ash, which had no effect upon moistened turmeric or reddened litmus paper. The ash readily dissolved with effervesence, in diluted hydrochloric, and also in acetic acid. These solutions precipitated on the addition of oxalate of ammonia. A portion of the ash folded up in the foil, and treated by the blow-pipe, left a residue, which gave to distilled water digested on it an alkaline reaction. The above properties are evidence of oxalic acid, which, when combined with lime on exposure to a moderate heat is converted into the carbonic; this latter upon the application of a more intense heat being driven off, leaving the lime in its caustic state.

A fragment weighing two grains and one-eighth was crushed in a steel mortar, and digested for a short time with a diluted solution of caustic potass. This solution treated with excess of hydrochloric acid afforded a trace of uric acid, easily recognised by the form of the precipitated crystals when observed under the microscope. The residue partially dissolved in hydrochloric acid, leaving behind a sensibly visible remnant. The solution in hydrochloric acid precipitated by ammonia a light and flocculent precipitate (insoluble in concentrated acetic acid), but which on being boiled in a tube of hard glass became heavy, and assumed a granular appearance. A portion thrown into carbonate of soda infusion in a silver capsule* was decomposed, oxalate of soda and carbonate of lime resulting; the oxalic acid in the soda salt being verified by the appropriate tests. In another instance the acid was disengaged, and reduced by strong sulphuric acid, equal volumes of carbonic acid and of carbonic oxide being obtained. These properties leave no doubt that the principal bulk of the fragment consisted of oxalate of lime.

The residue, after the action of hydrochloric acid, was collected, dried, and exposed to the full action of the blow-pipe flame. This merely reduced its bulk to a very slight extent, leaving a dark-coloured ash behind. The heat decided that it did not wholly consist of organic matter, some forms of which resist the action of hydrochloric acid. The ash was heated with nitric acid, with which it was boiled, and then washed and dried. This mass presented no very definite form, nor any distinctive optical character. It was next treated with a mixture of soda and potass, in a small platinum capsule, by means of the blow-pipe, when it melted, with slight effervescence, into an enamel-like mass, which readily dissolved in warm distilled water. From this solution hydrochloric acid threw down a gelatinous looking precipitate, of a whitish colour, and which, washed and dried, proved to be siliceous matter. The quantity thus obtained was very scanty, and afforded but a few very minute granules,† presenting the microscopical appearance of very minutely divided silex as obtained from flint glass.

*Observations.*—I am very much gratified in being able to thus submit more perfectly the composition of this calculus fragment, presenting the rare anomaly of siliceous intermixture. In the paper published some little time since in this journal, I stated that the silex in Dr. Yelloly's calculus formed the nucleus. On referring, however, to Dr. Yelloly's paper, I find this statement incorrect, as it is stated that the granules "were imbedded in and diffused through the oxalate of lime." This appears to be the state in which the silex existed in the present case (only not quite so large or distinct as to be mechanically separable from the surrounding mass of oxalate

* This is a much more ready process than boiling the oxalate of lime with a solution of the carbonated alkali, which is far more tedious, and requires long continued ebullition to effect the interchange. With ordinary care there is no danger of destroying the oxalic acid by over-heating.

† Although the solution was evaporated and heated in a platinium capsule, and the alkaline chlorides removed by solution, still the quantity of siliceous matter obtained was very small, but yet quite sufficient for its identification.

of lime), and so far may be looked upon as corroborative of the circumstances observed by Dr. Yelloly.

In the paper before referred to, as published in this journal, I inferred that the acid in the earthy salt was the phosphoric, which evidently is an error, and arising from not having critically investigated the nature of the acid, which proved to be the oxalic. So far as I am acquainted there are now but five recorded instances of silex detected in urinary concretions; and in four out of the five the silex was found intermixed with the oxalate of lime. Out of six hundred calculi analyzed by Fourcroy and Vauquelin, in two consisting of oxalate of lime silex was found blended with this earthy salt. Dr. Yelloly's instance formed the third, and the subject of the present paper presents the fourth instance of analogous character. In Wurzer's case the principal ingredients were lithic acid and phosphate of lime. The calculus itself weighed 870 grains, and the silex was in the ratio of one per cent.; or forming, by weight, 8·7 grains of the mass.

In the few instances recorded, the silex has presented with what may be termed the earthy diathesis. May not its presence, therefore, be referred to some articles of diet, of which silex, in some favourable form for solution, may have been a constituent? Liebig states that insoluble principles, forming part of our diet, and incapable of assimilation, or not required in the economy, are, for the most part, evacuated with the fæces. This may be readily observed in dogs after eating bones, the animal principles of which are digested and assimilated, while the phosphate of lime passes off with the fæces, in which, under certain circumstances, I have found a large proportion of lime, in the state principally of phosphate, with some intermixture of carbonate.

Certain of the soluble principles, the same authority states, pass out of the system with the urine. Hence, if silex, in a state favourable to solution, or even to soluble combination, be present and form a part of the articles used as food, we might thus expect to find it in the urine; and the possibility of such circumstances occurring but very seldom, would probably explain the occasional occurrence, but still very great rarity of siliceous deposits in urinary concretions. We, possibly, also may thus explain the apparent associations of siliceous matter and earthy concretions; those articles of which silex forms an obvious integrant generally contain a rather large proportion of lime.

What the peculiarity of circumstances are which render silex accessible to solution, it is difficult even to conjecture. Quartz digested for a long time in solution of caustic potass is dissolved at least in small proportion; for the decanted liquor precipitates silex on the addition of an acid, and the precipitate, in its hydrated state, readily dissolves in the caustic, or even the carbonated alkalies with basic reaction. Silex, also, when held in solution by the alkalies, precipitates slowly in minute brilliant crystals, when the liquor has been allowed to stand after being fully saturated with carbonic acid gas; and perhaps some similar reaction may give rise to its precipitation, when present, from the urine.

That soluble principles, either superfluous or incompatible with the purposes of the economy, pass off by the urine in preference, is not only attested, in some cases at least, by experiment, but to be inferred by analogy. We know that volatile principles make their way to the lungs and skin, and are exhaled with the breath, and the insensible transpiration. I have known persons in the poorer classes of society, and the poverty of whose circumstances obliged them to consume large proportions of strong-smelling vegetables, as onions, garlic, &c., in whom the skin exhaled the odorous principles of such articles so powerfully as to be highly offensive, and even capable, in a short time, of tainting the air of the room. It would perhaps be interesting, as likely to throw some light upon this subject, to examine the urine of animals fed upon matters comparatively abounding in silex,

with a view to the detection of this principle. The subject, even if unimportant in a pathological, is highly interesting at least in a philosophical sense.
*Med. Gaz., May* 29, 1846, *p.* 945.

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59.—LIVING ANIMALCULES IN HUMAN URINE.—By Dr. SHEARMAN.

[Dr. Shearman has communicated to the Provincial Medical and Surgical Journal a case of living animalcules in the human urine. His patient was a tall, emaciated young man, of phthisical conformation. After noticing the condition of the various important organs, Dr. S. observes:]

On examining the urine which he passed, from after dinner to bed-time, and that which he passed when he rose in the morning, daily, I found it of the specific gravity of 1.020 to 1.025, of dingy amber colour, faintly acid, with a peculiar deposit of urate of ammonia in very small quantities. But there are myriads of animalcules swimming about with great vigour in it, principally in three forms. One kind is almost a circle, with a little break in the circumference; another appears like very minute earth worms, some much larger than others, but they twist themselves about into various forms, and are in great abundance; a third form appears as if the body diverged into two tails. They are perfectly unlike spermatozoa, and appear to be pretty nearly the same circumference from head to tail. Whether the round ones eventually merge into the long description, I cannot affirm, but I think it very probable.

I have shown these living creatures several times to a medical friend accustomed to test the urine, who has been as much surprised at their appearance as myself.

There is no evidence of any disease in the spermatic organs or kidneys; he has never had syphilis, gonorrhœa, or disease of the bladder or urethra, and never been guilty of onanism. To prevent the possibility of imposition, I saw this man pass some urine into a perfectly clear glass jar, which I immediately examined, and found exactly the same kind of company enjoying themselves very briskly. Some of the specimens of the evening urine speedily become alkaline, and have killed all the live stock; but the others remain the same as when passed for several days, and the animals are quite active in it.

It will very naturally be conjectured that the animalcules have been generated in the fluid from the effect of the hot weather; but I have daily examined the urine of many other patients, and have kept some specimens for weeks, and I have this day examined the whole of them, and this is the only specimen of the kind I ever saw. Moreover, these animalcules exist in the urine when it is passed, which proves that the atmosphere has nothing to do with it. *Prov. Med. and Surg. Journal, July* 1, 1846, *p.* 299.

[Mr. Stallard, of Leicester, in a subsequent number of the Provincial Journal reminds us of the reference to these animalcules in Dr. Golding Bird's work (page 279), and then relates a case which occurred in his own practice. Mr Stallard observes:]

Last November I have recorded the case of a youth who was greatly emaciated, and had long been suffering from violent urinary irritation. The urine was very abundant, seventy ounces in twenty-four hours, it was passed with great agony; such indeed was the irritation of the bladder that the presence of stone was suspected, and frequently sought for, but in vain. The urine was pale, but muddy, specific gravity 1.010: it contained traces of free sulphuretted hydrogen, and was highly albuminous. By the aid of the microscope, pus-globules, altered blood-discs, and thousands of animalcules were observed. The animalculæ were present in urine directly obtained from the bladder, and died when decomposition had fairly set in. The patient had great thirst; the tongue was foul, having long red papillæ; the appetite was capricious, and the food taken produced great flatulence;

the bowels were purged, but the food passed in an undigested and fœtid state; the pulse was 110, feeble; the skin hot, and he had a slight cough. There was also some tenderness over the lumbar region. This case had been submitted to a great variety of treatment, but the warm bath, a moderate and easily-digested diet, together with gentle laxatives and tonics, were the means of giving him considerable relief. The patient shortly afterward left the town, so that I am ignorant of the final result.

I was led to inquire whether the animalcules had been generated in the bladder, by finding them in a specimen examined only two hours after the evacuation of the urine. In all former instances I had taken it for granted that they had been formed after the urine had stood some time, and had already begun to decompose. I still think that they are intimately associated with decomposition, since they are only observed in strumous and debilitated persons, where the vital energy is unable to correct the tendency to decomposition which the urine containing them is especially liable to. In the case I have alluded to, the urine contained free sulphuretted hydrogen and albumen; the latter I have almost uniformly observed in connection with vibriones.

[Mr. M'Dougall, formerly house-surgeon to University College Hospital, also notices Dr. Shearman's case of living animalcules. He considers the case to be one of spermatorrhœa, in which, when the case is of some standing, the spermatozoa become changed in character. He wishes Dr. Shearman to cause his patient to urinate into three separate glasses—that containing the first portion, he says, will have a few animalcules—the second none, and in the third portion they will be abundant.]

*Prov. Med. and Surg. Journal, July* 15, 1846, *p.* 324.

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## TOXICOLOGY.

60.—APPLICATION OF ELECTRO-GALVANISM IN POISONING BY LAUDANUM.—By Dr. Martin Barry.

[An infant, nine months old, had been dosed with laudanum in order "to put it to sleep." Medical assistance was not called in until nine hours after it had been administered, when of course all attempts to get rid of the poison by inducing vomission were useless, and the child appeared fast sinking under the ordinary symptoms of narcotic poisoning—in this state it was brought to the Edinburgh Maternal Hospital, and]

Dr. Barry applied electro-galvanism, using for this purpose the apparatus made by Abraham and Danser, of Manchester. At first the mixture in the trough contained one thirty-second part of strong sulphuric acid, the quantity of which was afterwards increased to one-sixteenth, and the pointer in the index was gradually brought round to the very strongest power. The wires were applied in turn to every part of the body, and the child was roused by their application, and kept awake, or at least kept moving an arm or a leg, so long as they continued in contact with it. When the wires were removed, even for a few seconds only, it sank sound asleep, the respiration continuing unchanged. At the end of about three hours, a little more susceptible, and perhaps somewhat more energetic in the movement of its limbs, but with this exception, the infant exhibited nothing like a satisfactory revival, until the tremendous current had been made to pass through its body for four hours and three quarters. Then, however, it really did revive, the respiration becoming more quiet, and the pupils undergoing some dilatation. From this time it recovered, required no further treatment, and in a few days was quite well.

In order to arrive at something like an estimate of the quantity of laudanum swallowed, Dr. Barry caused a pennyworth to be bought at the same shop. This was measured, and the quantity, one drachm and a half, compared with what was found remaining of the other pennyworth above referred to,

allowance being made for about the same quantity of water said to have been added. Say, therefore, laudanum dr. iss. + water, dr. iss. = dr. iij., of which a teaspoonful is said to have been swallowed. There was found remaining less than two teaspoonfuls, the same spoon being used as that with which the child had been dosed. Thus, a drachm of the mixture had disappeared, half of which was laudanum, or say a few minims less than half a drachm, say twenty-five minims.

*Prov. Med. and Surg. Journal, June 17, 1846, p. 273.*

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61.—POISONING BY PRUSSIC ACID.—By J. G. Fleming, M.D.

A gentleman, aged about forty-five, of stout muscular make, called at a tavern which he was in the habit of frequenting, on the 23rd of April, 1846, at five o'clock, P. M. He is stated to have complained of being faint, asked to be allowed to rest in another room, and to have a glass of water; he appeared agitated and breathed somewhat laboriously, but perhaps he was slightly intoxicated. He was shown into a room, and took his place in a reclining position on the end of a sofa; a tumbler, about three-fourths filled with water was placed on a table at his right side; he cannot be said to have been left alone an hour after this, as a party were for some time drinking in the same room, and the attendants were also occasionally in it. About six o'clock, all the glasses were removed, with the exception of the tumbler of water which had been given to him; the door of the apartment was shut, and he was left alone, occupying a similar position on the sofa to that already mentioned, and breathing heavily as if asleep. About three quarters of an hour now elapsed before any one entered the room, when he was found in the same position, but sitting more erect, his head leaning forward, his arms lying easily by his side, but quite motionless. This was about a quarter to seven o'clock. I was immediately sent for, and saw him in less than five minutes. I found him stretched on his back on the sofa, and quite dead; there was not the slightest action of the heart or lungs, and, from the coldness of the face, forehead, and hands, I inferred that he had been dead for half an hour. His features had a remarkably composed expression, as if he had died easily, his lips had some colour, his jaws were closed, eyelids quite shut, cornea prominent and glistening, the pupils about half dilated. I opened two veins in the right arm to satisfy the numerous bystanders, but no blood flowed.

On examining his person, shortly after this, I found in the trousers pocket of the left side a half ounce vial, loosely corked, labelled "Prussic acid," having a strong odour of that liquid, and wet as if recently emptied. I now examined carefully, but I could not detect the characteristic odour of the poison in the room, or from his mouth. A small quantity of fluid, I am satisfied it was water, had been spilled on the floor close to the sofa; neither this nor the water in the tumbler had the most distant smell or taste of prussic acid, and the landlady stated that the tumbler was nearly as full as when she handed it to him.

The body was inspected sixty hours after death; in this and in all the chemical researches for hydrocyanic acid, I was kindly assisted by Dr. John Crawford, Professor of Forensic Medicine in the Andersonian University. We could not detect any odor of prussic acid from the mouth or body. Features full—expression composed and as if asleep—cheeks not even devoid of their natural ruddiness—cornea prominent, though not so much so as immediately after death—eye glistening as in life—pupils about half dilated—rigidity of limbs much as is usual at the same period after death—abdomen had a greenish tint, indicating the commencement of putrefaction. The posterior part of the head, trunk, and limbs, were of a red colour, which did not disappear on pressure. The mouth was firmly

closed, and no fluid had been discharged from it. The right sleeve and side of shirt were stained with bloody serum, which had oozed freely from the veins which were opened in the arm.

[When the thorax and abdomen were opened, the characteristic odour of the acid was very decided. Some hours after the inspection, four ounces of fluid, taken from the stomach, having the odour of the poison, did not give the characteristic colour with protosulphate of iron. Dr. F. adds :]

Ninety hours after death the remaining contents of the stomach, amounting to about fourteen fluid ounces, and consisting of half-digested animal food, bread, and apparently malt liquor, having a faint odour of prussic acid, were put into a retort, with the addition of some sulphuric acid. The retort was placed on a sand bath, and distilled with a gentle heat for three hours, when two ounces of a clear fluid had collected in the receiver, having a distinct odour of prussic acid, masked, however, by the peculiar sour smell of half-digested food.

1. On rendering a portion of the distilled liquid alkaline by potash, the addition of a solution of the protosulphate of iron produced a dirty green precipitate, which by a few drops of hydrochloric acid was changed to a deep Prussian blue colour.

2. To the fluid rendered alkaline by potash, the addition of a solution of the sulphate of copper produced a greenish precipitate which became white on adding a few drops of hydrochloric acid.

3. On a solution of the nitrate of silver being added to the distilled liquid, a copious white precipitate took place. When this was dried and heated in a very narrow reduction tube, it emitted a gas which when ignited at the end of the tube, burned with a rose-coloured flame.

The complete success of these experiments thoroughly established the presence of prussic acid in the stomach. A portion of the distilled liquid was given to Dr. J. A. Easton, who has informed me that in his hands they were all equally successful. I beg to express my obligations to Dr. Penney for the facilities he afforded us of conducting these experiments in his laboratory. The following short observations are chiefly intended to point out in what respects the foregoing case accords with or differs from the symptoms and pathological appearances which have generally been observed in persons poisoned by hydrocyanic acid. An accumulation of well authenticated cases would be highly useful and interesting in a scientific point of view, and particularly valuable to the medical jurist.

It was ascertained that the unhappy man had procured half an ounce of prussic acid about fifteen minutes before he called at the tavern. There was no odour of the acid perceptible in the room or about his person within an hour after he took it, which would most likely have been the case had any of it been spilled, so we have every reason to conclude that the whole half ounce was swallowed, the bottle being empty when I found it. Next day I obtained a supply of acid from the same bottle as he had procured it, and submitted it to the method recommended by Dr. Christison, for ascertaining the strength of hydrocyanic acid, and the result was exactly what should have taken place with acid prepared according to the Edinburgh Pharmacopœia, which contains 3·3 per cent. of anhydrous acid, consequently the subject of the present case in half an ounce had, as nearly as possible, eight grains of pure acid. With scarcely an exception the dose which is equivalent to a grain has proved fatal. The Parisian epileptics had only two-thirds of a grain each. Sarah Hart scarcely a grain. The rapidity of death does not always appear to be in proportion to the largeness of the dose, but modified by circumstances, such as idiosyncrasy, bodily strength, and the quantity of food in the stomach. There are some grounds even for thinking that beyond a certain dose the effects are not increased, that is to say, a dose far greater than a merely fatal dose does not produce more violent symptoms or speedy death than the exact poisonous dose. The medico-legal question of how long a person after a poison-

ous dose may have power and consciousness to perform acts of volition and motion, is of the highest importance, as from these acts principally can it be inferred whether death has been the result of suicide or murder. In the recent case of the trial of Belany for the murder of his wife, the medical opinions were strong that all volition would cease after the scream which has been considered as characteristic of poisoning by this substance. This may be quite correct where a scream does take place, but it is by no means so frequent a symptom as is commonly supposed. It does not appear to have been heard in the case of Sarah Hart; it did not occur in two cases reported by Mr. Hicks (Med. Gaz., 1845); nor in a case given by Mr. Nunneley (Prov. Med. and Surg. Jour., 1845); neither was it heard in the case I have just narrated, though several individuals were in the adjoining room.

A sufficient number of cases, however, are now on record, to prove that after large doses, viz., from two drachms to four ounces of the medicinal acid of different countries, and consequently of a variety of strengths, relevant remarks may be made, and acts of volition and motion deliberately performed. I shall briefly mention three.

A gentleman at Bristol (1843), after swallowing half an ounce (Lon. Phar.) = five grains anhydrous acid, walked about sixty yards, articulated to an acquaintance several words distinctly and relevantly, and did not die for ten or twelve minutes. He gave no scream. A case is reported by Sobernheim of a young gentleman who took four ounces from two vials. He was found dead in bed, the clothes drawn up to his breast, his arms beneath the clothes, and on each side an empty two ounce vial. In Mr. Nunneley's case, already referred to, a gentleman after taking an ounce appears to have walked or rather ran up a stair, was quite sensible, and spoke rationally for about five minutes, and lived three quarters of an hour. The person I was called to, after drinking the poison from the vial, had the consciousness and power to recork it, and return it to his pocket, and from the absence of the odour from his mouth, and a small quantity of water having been recently spilled on the floor at his side, it is very probable that he had time to swallow a mouthful of water from the tumbler, and replace it on the table, before he was deprived of the power of voluntary motion.

[There are no post mortem appearances universally found after poisoning with prussic acid. The odour of the acid should be sought for both externally and internally; but it is not always appreciable externally as is shown by Sarah Hart's case. Internally, however, it can generally be detected within three or four days; occasionally it is altogether wanting, but these cases are rare. Among the most characteristic signs of poisoning by this drug should also be noticed, the calm and life-like appearance of the countenance, and the bright state of the eyes. There is also extreme fluidity of the blood, the veins being full and the arteries empty. The left auricle and ventricle of the heart are generally found empty, and sometimes all its cavities; but, in cases recorded by Mr. Nunneley, of Leeds, the heart was completely distended with dark fluid blood. The action of this powerful poison seems now generally acknowledged to be directly on the nervous system, to what tissue soever it be applied. Dr. Lonsdale's experiments have led him to conclude that, the immediate effects of the poison are exerted on the brain and spinal cord, and that the contractibility of the heart is indirectly enfeebled, according to the dose, or whether the acid be in a pure or diluted state.] *Monthly Jour. of Med. Science, July*, 1846, *p.* 12.

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### 62.—ACTION OF PRUSSIC ACID AS A POISON.

Dr. Meyer, as the result of his experiments with this acid on animals, states—1. That it had a paralyzing action on the peripheric nerves—i. e., it suppressed sensation and motion, and occasioned congestion, with aug-

mented secretion, which was chiefly observed in the cavity of the mouth. 2. He found it to act only when received into the vascular system. On mechanically arresting the circulation, the poison did not act, although the integrity of the nervous system was preserved. On restoring the circulation the operation of the poison was immediateiy observed. 3. Hydrocyanic acid does not act so rapidly as it was formerly believed. Its operation was never instantaneous. 4. Its fatal effect is owing to paralysis of the heart induced by the topical action of the blood, mixed with hydrocyanic acid, upon that organ. It required about thirty seconds for the poisoned blood to reach the heart and produce its paralyzing effects, and it mattered not whether the poison was applied directly to the substance of the heart, or to parts remote from it. In Dr. Meyer's opinion, prussic acid may act independently of the brain or nerves, or of their intervention. It requires for its operation, absorption and diffusion until it reaches the heart. It is owing to this, in his opinion, that amphibia are less rapidly killed by this poison than mammalia, the action of the heart in those animals being less necessary for the maintenance of life. Nevertheless, in a certain dose the poison may act upon and paralyze the nervous system, producing tetanic convulsions, congestion of the veins, and exudations in the serous cavities. It is not true, as is generally believed, that in death from prussic acid the blood does not coagulate. Dr. Meyer found that this liquid coagulated in the bodies of the animals which were killed in his experiments."—*British and Foreign Review.* *Lancet, June* 13, 1846, *p.* 660.

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63.—NEW TEST FOR PRUSSIC ACID.

The following new method of testing for hydrocyanic acid is proposed by Mr. Richard Austin, jun. of Dublin. The precipitate of cyanide of silver, say half a grain, obtained in the usual manner, is mixed with a small quantity of oxide of iron and carbonate of potash, and the whole fused together in an iron or platinum capsule. The fused mass is then dissolved in half an ounce of distilled water, filtered, and rendered slightly acid by the addition of a few drops of hydrochloric acid. The liquid thus treated is next divided into two portions, to one of which a few drops of a solution of sulphate of copper is added, which immediately causes the evolution of the chocolate-brown color, so characteristic of the ferrocyanide of copper; and to the other a few drops of the muriate tincture of iron, or any persalt of iron, when the solution becomes intensely blue by the formation of the ferrocyanide of iron, the ordinary prussian blue.

In Mr. Austin's opinion, " these two tests, with the well-known odour of prussic acid, are, independent of all others, sufficient to convince the medical jurist of the presence of free prussic acid." Mr. Austin adduces several arguments to show the superiority of this test over those already known to chemists, both in accuracy and facility of application, by persons not skilled in chemical manipulation. The precipitates above mentioned are very distinctly obtained with half a grain of cyanide of silver.—*Dublin Hospital Gazette.* *Lancet, July* 11, 1846, *p.* 49.

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64.—MAGNESIA IN THE TREATMENT OF POISON BY ARSENIC.—By M. Bussy.

At the sitting of the French Academy of Sciences, 18th May, M. Bussy presented a note on the use of magnesia in poisoning by arsenic. The results of his papers are as follows:

1. That purified animal charcoal, recently proposed against poisoning by arsenious acid, cannot be employed successfully for that purpose.

2. That magnesia in a state of purity, but not strongly calcined, readily absorbs arsenious acid in solution, and forms with it a compound insoluble even in boiling water.

3. That in the gelatinous state it still more readily absorbs the poison.

4. That animals which have been forced to swallow arsenic uniformly escape when made to take a sufficient quantity of magnesia.

5. That this antidote has, over every other, known or in use, the advantage of being found at hand in all the shops; that it readily and completely neutralises the poison; that it can be given in large quantity without inconvenience; and that its general effects on the systsm coincide with the indications of treatment to be fulfilled under the operation of the poison.

6. That magnesia decomposes emetic tartar, the salts of copper, corrosive sublimate, and that there is reason to believe it might be successfully employed to counteract and destroy the effects of these poisonous substances, and of metallic salts in general.

7. That the salts of the organic alkalies, morphia, strychnia, &c., being also decomposed by magnesia, the use of that substance, in the case of poisoning with organic products, owing their activity to the presence of vegetable alkalies, might be the means of impeding and retarding the absorption of the poison. This conjecture the author reserves for verification by farther trials.—*Gazette Medicale de Paris*, 23d Mai, 1846.

*Monthly Jour. of Med. Science, Aug.* 1846, *p.* 154.

[Dr. Christison's attention was lately called to this subject, by a case of poisoning with arsenic, in which magnesia seemed very useful: soon after this, his attention was called to the subject by observing that M. Bussy had read the paper just referred to before the French Institute.]

While waiting for the details of Mons. Bussy's inquiries, Dr. Christison made a few experiments to ascertain the amount of the action of magnesia; and he found that the dense magnesia of the shops exerts very little action in removing arsenic from solution in water; that a very light magnesia, now largely manufactured at Belfast, and quite free of carbonic acid, will remove about a twenty-fifth of its weight of arsenic from solution in water, when agitated with the solution for a few minutes, so that even ammoniacal nitrate of silver does not any longer indicate the presence of arsenic; that the same magnesia will remove about a twelfth of its weight of arsenic if agitated occasionally for a period of eight or twelve hours; that this proportion is removed entirely in less than three minutes if the mixture of magnesia and water be previously near the temperature of 212°; and that the same proportion is removed with as much speed at ordinary temperatures if the magnesia be used in the form of gelatinous pulp, as thrown down in a cold solution of sulphate of magnesia by solution of caustic potash, and washed with cold water.

It is well known that magnesia was proposed many years ago by Mr. Hume, of London, as an antidote for arsenic, and that several cases have been published in which it appeared to have been of service; but that its general utility has been doubted or denied on account of the apparent want of chemical action between oxide of arsenic and magnesia. Mons. Bussy's inquiries will probably clear up these difficulties. Meanwhile, it appears probable, from the experiments described above, that the general belief in the want of action between magnesia and oxide of arsenic has arisen from the circumstance that, for a long time, no other magnesia has been in current use in medical practice in Britain except the dense variety, which appears to exert very little action on arsenic in solution on account of its great density.

[Dr. Christison promised more accurate experiments and a statement of the successful case hereafter. Meanwhile it appears advisable that, when magnesia is used as an antidote, and cannot be promptly obtained in the gelatinous state, the light calcined magnesia should alone be employed, and in the proportion of between thirty and fifty parts to one of arsenic.

*Monthly Jour. of Med. Science, Aug.* 1846, *p.* 158.

**63.—POISONING BY KING'S YELLOW.**—By George Paterson, M.D., F.R.C.P. Physician to the Royal Infirmary, Edinbro', and Lecturer on Clinical Medicine.

[It was believed that this patient had swallowed a quantity of king's yellow, on the previous evening, with a view to self destruction, and it subsequently appeared that she had purchased a drachm of the substance, the whole of which there is reason to believe was taken.

On admission vomiting was frequent, with great anxiety and suffering, extreme collapse, surface of body cold, and pulse scarcely perceptible. There was no little uneasiness of abdomen or epigastrium on pressure. Warmth was ordered to the surface, with other means of restoring the circulation and animal heat—*Hydrated peroxyde of iron to be freely administered.*

8 P. M.—Pulse rose in an hour so as to be distinctly felt, though still weak; heat of surface was restored, and she had taken the peroxyde at frequent intervals, the greater part of which was vomited at first, but was latterly retained in the stomach.

May 30. Noon.—The measures adopted gave speedy relief, and refreshing sleep was procured. Pulse quiet, but weak; epigastric tenderness almost entirely gone; the bowels were opened by enemata of warm water. Only complaint at present is of slight pain in the larynx and trachea, increased on pressure.—To inhale; and mucilaginous drinks to be continued. Repeat opiate if necessary.

8 P. M.—Some vomiting since last visit. Little if any epigastric tenderness, but has now slightly accelerated breathing, and mucous rales are audible generally over the chest.

May 31. Noon.—Chest symptoms rapidly increased. When seen in the night she had violent cough, and extreme dyspnœa, the lungs appearing to be loaded with effusion. An emetic which was ordered did not operate. At present has dyspnœa and mucous rale in breathing; surface cold, and pulse scarcely to be felt; tongue dark and dry. Blister has risen. Still tenderness over the larynx and trachea. Urine reported to have been plentiful since admission. No convulsions or delirium. The patient died in the course of half an hour from the visit, or about 60 hours from the time she had taken the poison. King's yellow, according to Dr. Christison, contains * * * * sulphuret of arsenic, caustic lime, and free sulphur, and in all probability the lime exists in the form of a triple sulphuret of lime and arsenic. The point which in the first place demands some notice is the antidote employed, and its apparent effects in neutralizing the poison; we follow the Dr., who observes:]

Of the various substances which have been alledged to counteract the effects of arsenic, none as yet have stood the test of experience, unless it be the hydrated peroxide of iron. Of the rest some have been found, on further trial, to be totally inefficacious; while others, such as magnesia and charcoal, have owed whatever efficacy they may possess solely to their enveloping and dividing the particles of the poison, and so protecting the coats of the stomach from its irritant action. But the hydrated peroxyde of iron, so far as we are yet acquainted with its effects, does appear to act as a true chemical antidote, combining with the arsenic in the stomach to form an arsenite of iron, a substance of little solubility, and, consequently, of little energy. And although this compound seems capable of being partially acted on by the fluids of the stomach, whereby arsenious acid is again set at liberty, yet there is stated to be a further advantage attending the use of the peroxide of iron, in that an additional dose serves at once to neutralise the arsenious acid thus set free. Consequently, the antidote requires to be given repeatedly, and in excess. The remedy, it must be admitted, is of recent introduction, and has not, perhaps, received as yet a sufficient trial to enable us to rely on it implicitly. But this very circumstance gives an additional importance to the present case, where the hydrated peroxide of iron was freely and repeatedly administered, and, as far as the circumstances

of the case admitted, apparently with good effect. At least,
and by attention to the proper means for restoring the pul
surface, the severe symptoms which our patient presented
passed off, and, by the next morning, she was so far recov
have already stated, the immediate danger appeared to
Even this amount of relief could scarcely have been looked
consider that the poison had been ten or twelve hours on
fore any antidote, except milk, was administered; and thus,
ing that the case ultimately proved fatal, I think we have h
firmation of the efficacy of the peroxyde of iron. It will al
bered, that the symptoms immediately preceding death we
tense inflammation of the tracheal and bronchial mucous
which inflammation abundant evidence was discovered on po
amination; while the stomach and intestines were remark
those traces of the action of arsenic on their coats, which it
to find in cases of arsenical poisonings.

Secondly, the apparent cause of death. The circumstance
nection with the previous abatement of the ordinary sympto
ing by arsenic, and the comparative absence of those appea
we are accustomed to find in the alimentary canal, leave scar
for doubt that the bronchial affection was in this instance th
diate cause of death.

Thirdly. A question of considerable importance thus arises
bronchitis supervene accidentally in the course of this case,
currence intimately connected with the taking of the poison
is barely possible that in the hurry of removing and treating
of this kind, a degree of exposure quite sufficient to give rise
chitis might very inadvertently be permitted to take place on
medical attendants or friends. But the extreme violence
toms in the instance before us, and their rapid progress to a
tion, would almost, I think, require some other way of accou
than can be furnished on the supposition of mere inadverte
cold in the course of removal and treatment.

Besides, it is well known, that in cases of irritant poiso
there not unfrequently occur symptoms and appearances of i
organs which are more or less distant from the parts to wh
has been directly applied; and of the lungs among the rest.
particular, that antimony has been shown commonly to caus
animals have been poisoned with it. Others of the metallic
as corrosive sublimate and copper, are stated, among the
quences of their administration, sometimes to cause inflam
lungs. Again, as respects arsenic, Dr. Christison tells us, "s
are present signs of irritation of the lungs and air passages—
shortness of breath (which, however, is chiefly owing to the
the belly)—often a sense of tightness across the bottom of
more rarely, decided pain in the same quarter, darting also t
per part of the chest. Sometimes pneumonia has appeared
fection during life, and been distinctly traced in the dead bo
firmation of which statement several instances will be fou
the 4th edition of his work on poisons. It is to be observed,
pects all these irritants, that while inflammation of the lung
by authors among the affections which may occur from th
tion, in the case of none of them, excepting antimony alone
to as an ordinary or even an occasional cause of death. Its
case before us, then, must be regarded as an exception to w
occurs in poisoning by arsenic. But this is no sufficient gro
ing either that such was the mode of death here, or that th
and congestion of the lungs and bronchi, were closely and i
nected with the taking of the poison. If, among the symp

of the case admitted, apparently with good effect. At least, under its use, and by attention to the proper means for restoring the pulse and heat of surface, the severe symptoms which our patient presented on admission, passed off, and, by the next morning, she was so far recovered that, as I have already stated, the immediate danger appeared to many to be past. Even this amount of relief could scarcely have been looked for, when we consider that the poison had been ten or twelve hours on the stomach before any antidote, except milk, was administered; and thus, notwithstanding that the case ultimately proved fatal, I think we have here strong confirmation of the efficacy of the peroxyde of iron. It will also be remembered, that the symptoms immediately preceding death were those of intense inflammation of the tracheal and bronchial mucous membrane, of which inflammation abundant evidence was discovered on post mortem examination; while the stomach and intestines were remarkably free from those traces of the action of arsenic on their coats, which it is customary to find in cases of arsenical poisonings.

Secondly, the apparent cause of death. The circumstances taken in connection with the previous abatement of the ordinary symptoms of poisoning by arsenic, and the comparative absence of those appearances which we are accustomed to find in the alimentary canal, leave scarcely any room for doubt that the bronchial affection was in this instance the more immediate cause of death.

Thirdly. A question of considerable importance thus arises, viz., Did the bronchitis supervene accidentally in the course of this case, or was its occurrence intimately connected with the taking of the poison? It certainly is barely possible that in the hurry of removing and treating an urgent case of this kind, a degree of exposure quite sufficient to give rise to severe bronchitis might very inadvertently be permitted to take place on the part of the medical attendants or friends. But the extreme violence of these symptoms in the instance before us, and their rapid progress to a fatal termination, would almost, I think, require some other way of accounting for them, than can be furnished on the supposition of mere inadvertent exposure to cold in the course of removal and treatment.

Besides, it is well known, that in cases of irritant poisoning generally, there not unfrequently occur symptoms and appearances of inflammation of organs which are more or less distant from the parts to which the poison has been directly applied; and of the lungs among the rest. It is thus, in particular, that antimony has been shown commonly to cause death, when animals have been poisoned with it. Others of the metallic irritants also, as corrosive sublimate and copper, are stated, among the various consequences of their administration, sometimes to cause inflammation of the lungs. Again, as respects arsenic, Dr. Christison tells us, "sometimes there are present signs of irritation of the lungs and air passages—almost always shortness of breath (which, however, is chiefly owing to the tenderness of the belly)—often a sense of tightness across the bottom of the chest, and more rarely, decided pain in the same quarter, darting also through the upper part of the chest. Sometimes pneumonia has appeared a prominent affection during life, and been distinctly traced in the dead body." In confirmation of which statement several instances will be found at p. 346 of the 4th edition of his work on poisons. It is to be observed, indeed, as respects all these irritants, that while inflammation of the lungs is mentioned by authors among the affections which may occur from their administration, in the case of none of them, excepting antimony alone, is it adverted to as an ordinary or even an occasional cause of death. Its being so in the case before us, then, must be regarded as an exception to what ordinarily occurs in poisoning by arsenic. But this is no sufficient ground for denying either that such was the mode of death here, or that the inflammation and congestion of the lungs and bronchi, were closely and intimately connected with the taking of the poison. If, among the symptoms produced

by arsenic, we occasionally meet with inflammation of the organs within the thorax, there is no good reason why such inflammation may not, at a time, and under particular circumstances, be the direct cause of death, and that without our being constrained to seek for any other explanation than simply the effects of the poison, in order to account for it.

But here another question occurs, as to the mode in which these remote effects of the poison may be produced, and more particularly as to how they were caused in the case now under consideration. When distant organs are thus affected in cases of irritant poisoning, the circumstance is commonly ascribed to the absorption of the substance into the blood, and its conveyance to the part through the medium of the circulation; and rightly so, as is proved by various of those poisons having been detected in the blood, the liver, the urine, &c., by their power of acting through the medium of the skin—and, what is very remarkable, by their having a tendency, in whatever way they may be introduced, to affect certain organs and secretions in preference to others. This is illustrated by the case of antimony already alluded to, which generally proves fatal by exciting pneumonia; and also by arsenic, of which Dr. Christison informs us, that "whatever be the texture of the body to which it is applied, provided death do not ensue quickly, it almost always produces symptoms of inflammation in the stomach, and, on inspection after death, traces of inflammation are found in that organ." But there is another way, besides absorption into the blood, in which a poisonous substance may affect parts with which it has never come into direct contact, viz., by extension of the inflammation through continuity of surface; and it is in this way, I think, rather than in the former, that we are to account for the fatal bronchitis in this instance. I argue thus, in the first place, from the comparatively rare occurrence of bronchitis, especially fatal bronchitis, in connexion with arsenical poisoning; and, secondly, from the actual probabilities which there were in the present case, of the inflammation having extended in this manner; for, it will be recollected, that a few hours before accelerated breathing and mucous rales were first noticed, and at a time when, in all other respects, the aspect of the case seemed favourable, there was found to be slight pain on pressure over the larynx and trachea; and, on dissection, the mucous membrane of these parts was found intensely congested, and of a deep brownish-red colour, continuously with that of the bronchi. We conclude hence, that the inflammation passed downwards from the larynx to the bronchi; and how it was excited in the larynx is not difficult to explain, when we consider further the continuity of its mucous membrane and that of the pharynx, with which latter particles of the poison must have been brought into contact more than once, in the act first of swallowing the substance, and subsequently of vomiting. *Monthly Jour. of Med. Science, Sept.* 1846, *p.* 183.

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## VARIOUS SUBJECTS.

### 66.—SCROFULA.—By B. Phillips, Esq., F. R. S., &c.

[Mr. Phillips defines scrofula as a disease manifested by a peculiar deposit in the subcutaneous lymphatic glands. Mr. Dalrymple thinks the glands themselves are inflamed, and thus describes their appearance under the microscope:]

This enlarged gland appears to consist of a general parenchyma in a state of chronic inflammation, surrounding irregular masses of yellowish white matter more immediately the subject of examination. In direct proximity to the edges of this white material, the blood-vessels are seen to be more enlarged and congested than elsewhere; and in some parts the capillaries are occluded with coagulated blood. The parenchyma, which at first sight appears healthy, is, on examination with high powers, found to be infil-

trated with exudation corpuscles, resembling lymph-globules. The natural texture of the gland consists of its proper corpuscles, filamentous tissue, blood-vessels, lymphatics and nerves. In this morbid specimen, everywhere is the filamentous tissue infiltrated, and its fibres separated by innumerable exudation-corpuscles, and the proper corpuscles of the gland are similarly surrounded and imbedded. As the parenchyma is nearer to the white matter, so proportionably do the proper corpuscles of the gland become more indistinct, the filamentous tissue more obscure, the blood vessels irregularly dilated and filled with red globules, and they at last disappear insensibly. The exudation-corpuscles are more numerous, but irregular in size and shape, and interspersed with minutely granular matter.

[Does this disease arise from a change taking place in the elements of the blood, or does the part exercise a specific influence upon it, determining the character of the deposit; or, are both removed from a healthy condition? Mr. Phillips believes that the blood previously undergoes a change. He says,]

I have examined the blood in sixty-seven instances of scrofula, and although I have almost always observed a considerable deviation from the condition of healthy blood, the changes have not presented sufficient uniformity to induce me to regard any particular condition as specially characteristic of scrofula; the changes are such as seem to belong to a tolerably extensive group of affections, all, it is true, being connected with disordered nutrition and debility. . . . . I am not, therefore, in a condition to point out any particular state of the blood which is certainly characteristic of scrofula; but it is certain that if we examine the blood when the marks of scrofula are evident, its altered condition is also evident; but I know no particular condition of the blood which clearly marks the existence of scrofula. However, the occurrence of similar changes, at the same time, in different regions of the body, seems to point to some other than a local agent, as producing the change in the organ in which the deposit is made, and that agent the blood.

So much may, I think, be fairly assumed, that the blood is changed before the deposit is made, that the accumulation of certain morbid materials in the blood constitutes what is known as the scrofulous diathesis or constitution, and that their deposition in the subcutaneous lymphatic glands constitutes what we know as scrofula.

[Mr. Phillips divides the treatment of scrofula into the prophylactic and therapeutic, and under the first head mentions judicious assortment in marriage, and the dietetic management of infants. They ought to have a plentiful supply of fresh air, and be accustomed to take active exercise. He does not approve of infant schools; he says,]

I know that the health of those infants, who are suffered to amuse themselves as they please during the day is better, cæteris paribus, than that of those children who have been for many months regular attendants at infant schools. And the reason of the difference I apprehend to be this, that in children the blood is vigorously circulated through the entire frame, by means of the exertion of the muscular system, and this exertion of the muscular system can only be maintained by providing such amusement as will keep the body in motion. The listless walk around the school-rooms, though repeated many times a day, will not quicken the heart's action, and will not warm the hands and feet. And so long as the hands and feet, and the surface of the body remain cold for many hours of every day, so long the child will have congestion of some internal organs, and a state of permanent disease is readily induced; digestion is ill performed, nutrition is defective; and if this state of things be long continued, scrofula may be the consequence.

[In the curative treatment Mr. Phillips first speaks of iodine. He thinks its powers have been over-rated; he says,]

In my own practice I have exhibited every form of iodine extensively in

cases of scrofula, and, supposing the patient to remain exposed to the influence of the same conditions in which the disease was first manifested, and the period of the year to be that which has not been found favourable for the cure of the disease under other modes of treatment, I cannot say that I have reason to estimate the curative powers of iodine so highly as many others have done. I know that, among the out-patients of hospitals, whose circumstances remain unchanged, and who apply at the latter end of autumn or the beginning of winter, we may often exhibit iodine in every form for weeks or months without producing any sensible amelioration in the patient's condition. I know also that at the beginning of summer, a patient similarly affected and similarly treated, will, often in a few weeks, exhibit a marked improvement—but how much of this should be referred to iodine? How much to season?

Mr. Phillips, in common with all experienced practitioners, objects to the use of the simple tincture. He has found the iodide of iron a useful tonic, given in syrup, to the amount of four grains in the twenty-four hours. In whatever form the remedy be administered, he thinks it imprudent to continue its use longer than a fortnight, or three weeks, at a time. "At the end of that time the preparation should be set aside, aperient medicine should be employed, and its use should then be resumed with the same precautions. In this way, any virtues which the medicine possesses are more surely brought out, and the inconveniences sometimes experienced from its administration will be, as nearly as possible, avoided."

We have known numerous instances in which a scruple of the hydriodate of potass was taken daily for many weeks without any perceptible effect. The only rule we have for its discontinuance is the developement of catarrhal symptoms, which, in some people, supervene on its administration even for a short period.

Barium, or rather the chloride of barium (the old muriate of baryta), is a remedy, in Mr. Phillips' opinion, little inferior to iodine. "Barium, however," he observes, "seems to be a more certain stimulant than iodine, or rather, we might say, irritant; and, in my judgment, its use is clearly contraindicated where there is much free inflammatory excitability of the system. But in those cases where the tallow-like complexion, the pale tongue, and the languid circulation, accompanied by irritability of the mucous surfaces, are present, the virtues of the barium are often very remarkably demonstrated. I usually give it in solution, a grain to an ounce of distilled water, with ten drops of compound tincture of gentian. Of this solution, I commence with half an ounce twice a day, and on no occasion have I exceeded three grains in the day; and up to this moment I have not experienced any check in the administration of the medicine."

The hydrochlorate of lime is the basis of the anti-scrofulous nostrum of Nieumann. Mr. Phillips has frequently used it in the following form: a drachm to twenty drachms of distilled water, of which a teaspoonful was taken in milk two or three times a day. He has carried the dose up to two teaspoonsful, but has not exceeded that dose. He is not convinced that it has any very evident action on scrofulous glands, but in moderate doses it is more generally tolerated than the chloride of barium. The alkalies are of doubtful value; so also burnt sponge.

Cod-liver oil is useful, Mr. Phillips thinks, rather as an animal oil, than because it contains infinitesimal doses of iodine or bromine: The conviction on my mind is, that when good is derived from it, it is to be referred to the effect of the animal oil in improving digestion and nutrition, rather than to the presence of iodine; and if Popkins' impression be correct, that he has observed quite as much good to follow the daily use of fried bacon in such cases, and if it be further true, which I by no means admit, that butchers, oilmen, tallow-chandlers, tanners, and other persons who are continually coming in contact with fatty matter, are particularly robust and well nourished, and are known to be remarkably free from scrofula, then the

case in favour of the oily principle is so much the stronger. If the impression be correct, that cases are occasionally presented in which the good effects of cod-liver oil are remarkably apparent, and if the amelioration seem to concur with a much improved condition as to nutrition, I conceive myself justified in assuming that the one is the consequence of the other, without being required to frame a theory why animal oil improves nutrition.

[Mr. Phillips places very little reliance on sea-air and sea-bathing; he prefers change of inland air and cold bathing; he thinks mineral waters do little good.]

The season of the year has, in Mr. Phillips' opinion, much influence in the development and amelioration of scrofula. "I have fully satisfied myself that scrofulous cases are most numerous and most aggravated in spring and the beginning of summer; that they are least frequent and most ameliorated at the commencement or the middle of autumn; and that at the one period they have been aggravated by the cold of winter, at the other they have been ameliorated by the warmth of summer; and this has happened when all other influences have been apparently unchanged.

When do we send patients to the sea-side? Precisely at that season when they would improve anywhere. When do we find any remedies best succeed? Precisely when the season is becoming favourable. When do we find all medicinal agents comparatively powerless? Precisely when we get no help from the season. True it is, we may take a poor child from the streets in the depth of winter, and give him good food and lodging, and his disease will be improved, and this without reference to the season; but then we have improved nutrition. But let a poor child remain at home, and we shall usually find every specific fail to improve his condition until favoured by season; and let almost any one of the unsuccessful remedies be used when the end of spring comes, and its apparent good effects will soon be obvious enough. Now, if that position be correct, it must be evident how defective the estimate of every plan of treatment is which does not include the influence of season."

*British and Foreign Med. Review, July*, 1846, *p.* 124.

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67.—NEW COMPOUND OF CHLORINE, IODINE, AND MERCURY, IN SCROFULA.

M. Rochard has communicated to the Académie des Sciences, Paris, a paper entitled "Trial of a New Compound of Chlorine, Iodine, and Mercury, in the treatment of Scrofulous Affections."

The author reports a considerable number of cases, the results of which seem to him to prove that this composition, which M. Boutigni has made known, and designated by the name of "iodhydrargirite de chlorure mercureux," exercises an efficient action in scrofulous affections of the most serious character, and also in inveterate cutaneous diseases. He states that after having obtained some rapid cures in psoriasis lichen, chronic eczema, herpes, maculæ, &c., the idea occurred to him of extending its employment to the treatment of scrofula. He cites, amongst others, some successful cases of white swelling, with caries, and fistulous canals; of numerous enlarged indurated or ulcerated ganglia; of chronic ophthalmia, complicated with ulcerating keratitis; of ulcerated lupus; of goitre; and finally of large scrofulous abscesses, succeeding to an anti-syphilitic treatment. In these several cases, the action of the remedy was quick and permanent, though varying in the various forms of the diseases. M. Rochard employs the medicine externally in the form of ointment.

*Prov. Med. and Surg. Journal, June* 3, 1846, *p.* 258.

68.—LAND SCURVY, PRODUCED BY EATING DISEASED POTATOES.—By Dr. M'Cormack, Buncrana, Donegal.

[Dr. M'Cormack has given this name to a disease he has met with, in as much as it bears a striking resemblance to a disease thus named in the Transactions of the Medical and Physical Society of Calcutta.

Dr. M'C. believes that the cases recorded in No. 24, vol. ii., of the Dublin Hospital Gazette, by Dr. O'Brien, of Naas, as a peculiar form of land scurvy, though not so aggravated as those alluded to in the above-named transactions. Dr. M'Cormack's patient was a factory girl, 18 years of age; she was very destitute, potatoes being her only sustenance, and these of a diseased character. She first of all felt acute pain in two of her front teeth, which continued about 14 days, when it became so severe as to prevent sleep at night, and was equally intense during the day; there were also symptoms of febrile action, and severe pains in the joints and small of the back came on, and she began to be very delirious. There was also pain in the region of the heart, and palpitation on the slightest motion. The following was her condition when Dr. M'Cormack first saw her:]

*Present symptoms.*—The pain in her teeth is now excessive, and has continued so for the last fourteen days; no appearance of caries in any; the gums, especially of the lower jaw, are swollen, painful, spongy, and bleed on the slightest touch; even the attempt to swallow causes an oozing of blood. On examining, I found the gums as described, the teeth loose and extremely painful; fauces and mouth inflamed, and ulcerated in patches; tongue flabby, and thickly loaded with white fur; breath horribly fœtid, great difficulty in swallowing; pulse 130, small and feeble; muscular pains excruciating; joints swollen and very painful; skin over the whole body tense, tumefied, and of a preternaturally dark colour; vibices scattered over the limbs; great prostration and despondency; constant involuntary sighing; face and head enormously swollen; countenance pallid, unmeaning, and indicating indifference of her fate; no sleep, from the pains of the joints. The bowels had been obstinately constipated for several days, and the mother had given her a dose of senna and salts, the evacuations caused by which brought on such extreme exhaustion that she thought she was dying, having had several fainting fits in rapid succession. Urine scanty and high-coloured; the belly hard and dropsical; heat of skin intense; has had no medical advice. The two teeth in which the pain commenced have split in two perpendicularly.

Of the treatment, I shall at present say nothing more but that it consisted of all the remedies, both medicinal and dietetic (as far as circumstances would allow), which will be described as having been used in the disease as it appeared in India; and all failed to produce more than temporary relief.

*Remarks.*—On the first view I took of this case, I was led to think, that, perhaps, from the situation in which she was placed (working in a factory, where there was an indiscriminate mixture of both sexes), she might have fallen a victim to some disease, to cure which, not wishing to expose herself to the wrath of her parents, she had taken mercury clandestinely, and that, therefore, she was labouring under the usual effects of this mineral, aggravated, as we are all aware it can be, by want of proper care. This view, on the minutest investigation, I was convinced was erroneous. I therefore began to turn in my mind the extraordinary features it presented, and its resemblance in every point to that once formidable scourge of our navy, the sea scurvy. I then remembered having met, in the eighth volume of the *Transactions* before mentioned, two very interesting papers on a form of land scurvy which attacked our native troops, in several parts of India, in the year 1834. Having the volume in my possession, I referred to it for information, and I was most forcibly struck with the faithful likeness between the disease, as therein described, and the case before me. Having also, some days previously, read with great interest the cases described by Dr.

O'Brien, I turned to the number of the Gazette which contained them, and after a careful comparison of their symptoms with those mentioned in the volume alluded to, I was led to what I believe is a correct conclusion—namely, that the disease, called by Dr. O'Brien a peculiar form of gastro-enterite, was nothing more nor less than the land scurvy of India.

[Dr. M'Cormack quotes the testimony of Dr. Macnab, and Mr. Rose, of Calcutta, to show that the disease had its origin in deficient and unwholesome food; and then proceeds to give the symptoms of the disease as met with in India. There is a striking similitude in the symptoms. The quotation is from an account of the disease by Dr. Macnab, who says:]

The following was, perhaps, the more regular succession of symptoms. For the first few days the patient felt some soreness in the gums, which might be seen to push up, puffy and congested, between the incisor teeth. There was langour, and, perhaps, a paroxysm or two of fever, or, at times, regular evening accessions. Day after day the blunt, projecting edges of the gums grew more prominent, became soft, and soon assumed a spongy, hæmorrhagic character; the fauces, mouth, and tongue got pallid, and the breath emitted a heavy feculent odour. Now the pulse increased in frequency throughout the day, irritative fever set in, tormenting pains were developed in the muscular (more rarely in the tendinous) portions of some one or more extremities, such as the leg, arm, or thigh; seldom in more than one member, unless when the cases were of considerable aggravation. These sites became tumefied, exceedingly tense, non-elastic, and having over them a colour preternaturally dark. They were more or less diffused, sometimes occupying the whole circumference of the limb, as the leg from the knee to the ankle, which would have a shining polished appearance—vibices occasionally came out in other places, without pain or swelling. In this state the patient's health and strength wasted rapidly; the teeth imbedded in the flabby vegetating gums felt loose, and were unfit for the purpose of mastication. Horrid fœter now proceeded from the mouth; despondency took active possession of the mind. There was no sleep, from intense suffering, nor was there any appetite. * * *

At page 121, he thus proceeds—"Blotches frequently occupied the thighs and hips, that occasioned little or no inconvenience. These were of a lighter colour, and of a slightly reddish tinge, or flesh-coloured. Neither the one nor the other ever lapsed into ulceration under my observation. Sometimes discharges of blood, to considerable amount, took place from the nose, never, to my knowledge, from any other cavity. From the gums very slight irritation brought blood, in some cases very copiously, at all times to some extent. . . . In proportion as the complaint put on a milder aspect, and that it became less prevalent, the mouth was much seldomer the seat of disease; in many, not at all, the only symptom being the pains and swelling in the extremities so often mentioned as prominent symptoms throughout. . . . . The secretions in most cases were not materially altered. Seldom was there any constipation, neither were the bowels much relaxed, unless medicine happened to be administered with too free a hand, in which case they might become troublesome. The urine was always high-coloured, and strongly odorous; but I do not know that it possessed any other remarkable qualities."

Let us now briefly refer to Dr. Ross for his statement of the symptoms: "The patients were, in the first instance, admitted with severe pains in the inferior extremities, particularly about the ankle-joints, gums more or less spongy, and, in many instances, completely concealing the teeth from view; pulse considerably accelerated, loss of appetite; occasionally considerable intermissions of pain occurred, but in almost every case, a great increase of pain occurred during the night; many patients had discoloured patches on the legs, and in the worst cases, great swelling and hardness, generally about the gastrocnemii muscles; in some, the subcutaneous glands of the legs were enlarged. As the disease advanced, diarrhœa

supervened, and was the immediate cause of death in most of the fatal cases.

[The only remedy which seemed of a curative character in this dreadful malady, was change of air; therapeutic and dietetic measures exercised little control over it. The remedies Dr. Macnab employed were the mineral and vegetable acids, preparations of iron; the bitters, as cinchona, chiretta, wine, beer, &c. Dr. Macnab considers death certain unless a change of climate is made; he says this is the "ultima et unica remedia."

Dr. M'Cormack's patient gradually recovered under a generous diet, with bitters, as quinine, &c.] *Lancet, July* 25, 1846, *p.* 91.

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69.—HYDROPATHY.—By Dr. Forbes.

[The Editor of the British and Foreign Medical Review, after a careful consideration of the whole subject, comes to the following conclusions; and we particularly direct attention to his first, as it embodies fairly the intention and practice of the late Dr. Currie in the use of cold water in the treatment of the general febrile paroxysm. He says:]

1. We should be glad to see Dr. Currie's practice revived (for the sake of experiment, at least), in all its boldness, for the suppression of the general febrile paroxysm. On carefully looking over the evidence published by Dr. Currie and his contemporaries, it is impossible to deny that they attained a larger amount of success in treating fever by water than other practitioners have done by other means. We have already pointed out how their practice has been misunderstood by modern writers. But, while we regard this practice as well adapted for treating general fever, we find no proof that it is competent to meet the dangerous local complications with which fever is so often accompanied. These complications may reasonably be expected less frequently, when the early treatment of fever is rendered more efficacious. But when they do occur, we find nothing in hydropathic writers to show that lancets, leeches, blisters, &c., can be dispensed with.

2. In a large proportion of cases of gout and rheumatism the water-cure seems to be extremely efficacious. After the evidence in its favour accessible to everybody, we think medical men can hardly be justified in omitting—in a certain proportion of cases, at least—a full trial of it. No evidence exists of any special risk from the water practice in such cases.

3. In that very large class of cases of complex disease, usually known under the name of chronic dyspepsia, in which other modes of treatment have failed or been only partially successful, the practice of Preissnitz is well deserving of trial.

4. In many chronic nervous affections and general debility we should anticipate great benefit from this system.

5. In chronic diarrhœa, dysentery, and hæmorrhoids, the sitz-bath appears to be frequently an effectual remedy.

6. We find nothing to forbid a cautious use of drugs in combination with hydropathic measures. On the contrary, we are convinced that a judicious combination of the two is the best means of obtaining the full benefit of each. The water-cure contains no substitute for the lancet, active purging and many other means necessary for the relief of sudden and dangerous local maladies. The banishment of drugs from his practice was necessary, and perhaps natural on the part of Preissnitz; the like proceeding on the part of qualified medical men, superintending water-establishments in this country, evinces ignorance, or charlatanry, or both.

7. With careful and discreet management, in the hands of a properly qualified medical practitioner, the water-cure is very rarely attended with danger.

8. Many of the principal advantages of hydropathy may be obtained in a private residence, with the assistance of ordinary moveable baths. There-

fore, it can easily be brought under the direction of the regular medical practitioner.

9. In many cases, however, it is evident that what may be termed the mere accessories of the water-cure, are of extreme importance in bringing about a favorable result; and these accessories are frequently not available —or available in a very inferior degree—in ordinary practice. Among the more important of these accessories we may mention the following as having relation to most of the chronic cases treated in hydropathic establishments: 1, relief from mental labours of an exhausting or irritating kind, from the anxieties and responsibilities of business, from domestic irritations of various kinds, from mental inaction or ennui, &c.; 2, change of locality, air, scene, society, diet, &c.; 3, the fresh mental stimulus involved in the almost constant occupation of the patient's time, in the performance of the numerous and various dabblings, paddlings, sweatings, washings, drinkings, rubbings, &c., imposed by the water treatment; 4, the frequent and regular bodily exercise taken in the open air, or within doors; 5, the powerful mental stimulus supplied by the confidence generally reposed by the patients in the means employed, and by the consequent hope, alacrity, cheerfulness, &c.; 6, the total abandonment of vinous and other stimulants, and of drugs—all of which have, in a large proportion of cases, been tried and found, not only useless, but probably, productive of disadvantage.

10. A certain and not inconsiderable portion of the benefits derived from hydropathic establishments are, however, attainable without them, by other means, as by travelling, &c., &c. For example, we suspect that many of the most striking results witnessed in such establishments, as in the case of Sir Edward Bulwer Lytton or Mr. Lane, would have probably been obtained, if the patients had chosen to hire themselves, and had worked as agricultural labourers, in a dry, healthy district, and had lived on agricultural fare, sufficiently nutritious in quantity and kind, for a sufficient length of time.

11. Notwithstanding the success of the founder of hydropathy, its practice by non-professional persons can neither be fully advantageous nor safe. At the same time, it is true that very little experience is necessary to enable an educated medical man to acquire sufficient insight into it for purposes of practice. Many of the best hydropathic physicians have, in the first instance, devoted very few weeks to studying the subject in Germany.

12. Many advantages would result from the subject being taken up by the medical profession. The evils and dangers of quackery would at once be removed from it. Its real merits would soon be known. The tonic portion of its measures might then be employed in conjunction with special remedies of more activity, which, no doubt, would often prove exceedingly beneficial.

13. The benefits ascribed to hydropathy, but arising indirectly from the abandonment of drugs, vinous and other stimulants, &c., may certainly be obtained without sending patients to Graeffenberg.

14. Finally, it must always be remembered that the distinction between quacks and respectable practitioners is one, not so much of remedies used, as of skill and honesty in using them. Therefore, let our orthodox brethren be especially anxious to establish and to widen, as far as possible, this distinction between themselves and all spurious pretenders.

*British and Foreign Med. Review, Oct.*, 1846, *p.* 457.

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70.—MELANOSIS.—By Holmes Coote, Esq., Surgeon to the North London Ophthalmic Institution.

[There is an error in applying this term to all tumors and deposits of a dark colour, no matter what their character or situation. Melanotic swel-

lings appear to be pigment-coloured morbid products, very variable in character, especially cancerous. Mr. Coote thinks the character of this affection, as described by Mr. S. Cooper, is calculated to put it in an improper light. He says:]

Chemical analysis by MM. Lassaigne and Foy, has shown that melanotic matter differs but little from blood in its ultimate elements. A solution of chlorine will bleach the black mass from a melanotic eye, consequently, it differs essentially from the carbonaceous deposits in the lungs of miners. This statement receives further confirmation from microscopical examination. If a portion of melanotic matter be magnified from 5-800 diameters, it will be found composed of—1st. Nucleated cells of irregular form, generally somewhat flattened, oval, bean-shaped, club-shaped, or caudate, containing pigment granules in variable quantity, and in a state of molecular movement. 2ndly. Of free granules. 3rdly. Of a delicate fibrous stroma. 4thly. Of oil globules. Some additional fibres may be derived from the organ in which the tumor is placed. None of the surrounding parts show the slightest trace of inflammation.

It appears that the growth of the tumor consists—1st. In the formation of the parent cells. 2ndly. Their rupture when fully matured, and the escape of the nuclei and pigment granules. 3rdly. In the development of the nuclei into complete cells. The granules, when free, are constantly undergoing absorption. If, from any cause, the development of the cells be arrested, the rapid removal of the free pigment granules will lead to considerable diminution in the size of the tumor.

Melanotic tumors, then, do not consist of an unorganized deposit; the cells have their periods of growth, maturity, and decay; neither can they be regarded as mere accumulations of pigment, for the cells have a totally different form from those of healthy choroid.

In order to establish the view that melanosis, when fatal, is combined with the elements of cancer, it is necessary to define what these cancerous elements are. In the sooty-black non-vascular patch, characterising cutaneous melanosis (an affection which Mr. Lawrence regards as malignant), I never could discover any structural affinity with cancer, medullaris, or fungoides. It is true, that cancerous tumors may be sometimes colored by pigment deposit, but that is no proof of the patient being affected with melanosis. The cavity of the globe may be occupied by a mass partially black and partially white, or of reddish hue; but it must be remembered that diseases of different characters often manifest themselves in the same tumor. Melanotic tumors occasionally present a spotted appearance, some parts being of a lighter color than others; but this may depend upon variations in the quantity of the pigment granules contained in the cells.

The constant ocurrence of primary melanosis in situations where, in the healthy state, pigment is often deposited; the chemical composition of such tumors; the appearances which they present both to the naked eye and when placed under the microscope, warrant the inference that this is a disease sui generis, manifesting itself by the accumulation of pigment cells in a morbid state. It is difficult exactly to define the meaning of the term "malignant." The limits of this paper will not allow me to inquire whether it may be correctly applied to the disease now under consideration. Such a question obviously depends upon the sense in which the word is used—a point far from being clearly settled. In man, however, melanosis is a rapidly fatal disease. When once fairly established, whether the primary tumor be extirpated or not, the patient dies, in the course of one or two years, of accumulations of similar character in all parts of the body. In the horse the disease is not so fatal. Mr. Spencer has known an animal live for ten years after the removal of the primary tumor, being fit for work the whole time.

[In the human subject, melanosis is most frequently met with from the 40th to the 60th years. Mr. Coote goes on to say:]

Melanosis of the eye commences between the choroid and retina; the former membrane remains of its natural consistence; the latter is compressed, pushed to one side, or to the centre of the globe, but not otherwise altered. In the earliest stage the eye becomes amaurotic, without obvious cause; frequent attacks of inflammation come on; but from five to eight years may elapse without any morbid change being observable. Then, if the growth proceeds from the posterior part of the eye, the retina is pushed forwards; the vitreous humor is absorbed; the posterior capsular vessels are destroyed, and the lens, rendered opaque, protrudes, together with the iris, into the anterior chamber. The conjunctival vessels become enlarged, tortuous, and distended with blood; the sclerotic coat yields unequally, and presents an irregular lobulated appearance, resembling staphyloma. Sudden attacks of inflammation, attended with pain and chemotic swelling, come on; the sclerotic coat gives way, either a few lines from the margin of the cornea, or near the entrance of the optic nerve; and the melanotic mass, freed from restraint, protrudes, covered by conjunctiva, from the eyeball. Primary melanotic tumors of the skin are either cutaneous or subcutaneous. The two commonly occur together.

Cutaneous deposits (melanose membraniforme, Andral) appear as smooth black spots, with a defined margin, varying in size from a pin's head to a shilling, lying upon the cutis, and covered by the cuticle, which is not raised. They frequently commence around a congenital spot; spreading laterally, two or more may become confluent. Subcutaneous deposits (melanose tuberaforme, Andral) exist as dark colored tubercles, varying in size from a pin's head to a small orange. Invisible when small, they distend the skin as they acquire bulk, and appear as prominent blueish-black spots; the color deepest in the centre gradually fading away to the circumference.

The integuments at last give way, and a black mass protrudes: the surrounding vessels pour forth some blood, and a dark-colored fluid flows from the open surface. If the mass be removed wholly, by the knife, or partially, by ligature, the wound will heal, but the disease inevitably returns, either in the cicatrix or some distant part. The cicatrization of wounds, after the partial removal of melanotic tumors, in the horse, has been noticed by M. Leblanc, who observes, "It is not always thus in cases of scirrhus or encephalous tissues. When, in operating upon such, they are not completely excised, they become purulent, or ulcerate, and thus prevent the wound from healing.

The primary disease advances with unequal rapidity, but secondary accumulations generally form before the primary tumor has attained very considerable size. The absorbent glands are rarely affected. The development of internal disease is marked by general lassitude, and undefined pains over the trunk and limbs; the rest is disturbed; the appetite fails, and emaciation commences. The liver, rapidly increasing in size, projects with irregular surface from the lower margins of the ribs, and distends the abdomen; dark-colored matter is voided by the bowels or ejected from the stomach; the diarrhœa, if arrested, alternates with violent and uncontrollable pains in the head, and the patient dies exhausted, but retaining his faculties to the last.

Upon examining such a case after death, melanotic matter is found accumulated in every part of the body, except, perhaps, the cornea, synovial membranes, and tendinous structures. Upon free surfaces it is deposited in layers (melanose membraniform); in other parts it is accumulated in masses (melanose tuberiform), which, when cut open, are softened and almost fluid within. They have no distinct cyst. Secondary accumulations often attain an enormous size. The liver of a patient, examined by Mr. Lawrence, weighed seventeen pounds and a half. "The greater part of the mass," says Mr. Lawrence, "was melanotic, yet the gall bladder was full of healthy bile. The ovaries were converted into irregular lobulated masses, about eight inches in length, which retained no trace of natural structure. The

consisted of a thin but dense cyst, filled with melanotic structure, of soft consistence but of the deepest dye. The ovaries and a cast of the liver are preserved in the Museum of the Royal College of Surgeons.

The disease sometimes extends from the orbit to the cavity of the cranium; a large black mass forms at the base of the brain; a dark-coloured sanies flows from the orbit, and the patient dies with symptoms resembling apoplexy. It has been commonly stated, that by the early and complete removal of a melanotic tumor the patient is afforded a good chance of permanent cure. This opinion has been recently supported by Dr. Argyle Robertson, in a short pamphlet upon melanosis. My own observations lead me to a totally opposite conclusion. Thoroughly convinced of the inefficacy of any operation in radically removing the disease, I doubt much whether we can affirm that it even prolongs life. Patients may fairly be recommended to submit to the removal of superficial tumors, which, by their position or size, produce inconvenience; but the more serious operation of extirpation of the eye ought never to be undertaken, except at the patient's express desire, and after he has been fairly made acquainted with the circumstances of the case. *Lancet, Aug. 8, 1846, p. 142.*

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71.—CASE OF SWEATING SICKNESS.—By Dr. J. A. Lawrie, Surgeon to the Glasgow Royal Infirmary.

[This patient, about 60, was subject to biliary derangement. One of these attacks was brought on April 28, 1846, by some bad porter, and on May 1, he had severe pain around the umbilicus, followed by bilious vomiting. On the night of the 2nd, he slept comfortably till half-past one, A. M. of Sunday, when the most violent perspiration came on and remained unchecked till six, A. M., and rendered all the bed-clothes dripping wet as if they had been dipped in water. At ten, A. M., severe rigors followed, then cramps in the limbs and intense pain in the abdomen, for which a large blister was applied; he was very weak and restless; pulse small and easily compressible; voice husky; choleric; hands bleached; cold perspiration, especially on the head; countenance sunk; intense thirst and desire for cold water; with great feeling of internal heat. These symptoms increased in importance and severity until Monday, when the pulse was almost imperceptible; constant restlessness and tossing; no urine. In a word, he had all the symptoms of a patient about to rally from an acute attack of cholera. Brandy, cold water, and beef tea had been ordered, but he refused everything except cold water. These with ice or iced water he was ordered to any extent short of causing vomiting. From this time he began to rally, and was able on the next day (the 4th) to rise and shave himself. Symptoms of some importance, however, continued on the 5th; vomiting of a decidedly bilious character and a comatose state of the brain; 6th, the same condition of brain with severe vomiting and a copious vesicular eruption on the nose and lips. These symptoms became more mitigated, and at length the remaining part of the case was that of a mild but tedious secondary fever, from which the patient did not recover until the 10th of June.

The points of interest in this case appear to be—]

1. The amount of perspiration. I have never met with any case in which the same amount of fluid was discharged by the skin in the same brief period.

2. Its immediate effect. I have never before seen collapse produced by perspiration. In this case it was complete, the patient being for some time pulseless. It is worthy of remark, that the collapse was less sudden than in cases of acute cholera. It did not reach its acme till nearly twenty-four hours after the excessive perspiration had ceased.

3. The secondary symptoms. These were precisely those of some of

mercurial ointment—say a drachm, or more; and I have applied the roller, thus prepared, not very tight, round the knee; repeating the application daily. The motions of the child produce the necessary friction; and the cuticle being thin, the mercury easily enters the system. This causes neither griping nor purging; in a child it does not even in general cause soreness of gums, but it cures the disease. Very few of those children ultimately recover in whom the mercury has been given internally; but I have not seen a single case in which this other method of treatment has failed.

[We cannot say too much in favour of this mode of administering mercury to children. Since Sir B. Brodie's recommendation of inunction in adults (see Retrospect, Part ix, Art. 65), we have repeatedly tried its effects in children, knowing how very unsatisfactory was its exhibition by the mouth, when the system was required to be affected. We cannot but suspect that its failure in cases of acute hydrocephalus, in children, is often owing to its powerless effects when given by the mouth.

In a case which lately occurred in our own practice, its effects seemed to be very evident and surprising. It was one in which some of the most urgent and fatal symptoms were present; such as very dilated pupils, constant convulsions, hemiplegia, and more or less stertorous breathing; in short, so violent were the symptoms, that we considered the case perfectly hopeless; but on reflecting on Sir Benjamin's method, we ordered the strong mercurial ointment to be smeared on each leg, every 12 hours, and covered with a stocking made to tie lightly above the knees. The symptoms soon began to abate, and by following this up with small doses of the iodide of potass, frequently repeated (gr. j., every three or four hours), the head symptoms vanished.

In a second case, the same set of symptoms were approaching, but were stopped by the same mode of treatment. We would, therefore, recommend our medical brethren to attend more to mercurial inunction in diseases of children.] *British and Foreign Med. Review, July*, 1846, *p.* 169.

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75.—EFFECTS OF SUBSULPHATE OF MERCURY (TURPETH MINERAL) AS AN EMETIC.—By Dr. Hubbard, U. S.

[There are certain diseases, such as croup and scarlatina maligna, and there are certain conditions of the system, as great prostration, wherein there is insensibility of the stomach to the action of the ordinary emetics, and we are obliged to give them in such doses as induce a cathartic action, when the simple object we have in view is procuring vomission. Dr. Hubbard illustrates this postion by relatiug a case of spasmodic croup. He observes:]

I was called in the night of February 5, 1845, to see Miss C——, aged about 12 years. In the three preceding nights, at about the same hour, she had been seized with paroxysms, similar to the one in which I found her—each one continuing several hours, each of progressively increased severity, and each leaving her able to be about, during the day, with respiration so easy as to excite no alarm, and only a slight croupy cough. I found her with breathing extremely quick, laborious, and stridulous, the chest heaving with convulsive throes, the countenance livid, the eyes wild and distracted, extreme jactitation, the pulse thread-like, vacillating, and too rapid to be counted; the extremities, up to the body, of an icy coldness; in short, the patient appeared like one in the last agonies. Strong rubefacients were immediately applied to the whole surface, sinapisms to the spine and extremities, and heated blankets to the lower limbs. As soon as she could swallow—for deglutition was at first extremely difficult—five grains of the *turpeth mineral* were given at once, and followed with the free use of mustard whey; this not vomiting her, after fifteen minutes I gave her five grains

more, immediately upon swallowing which vomiting commenced, and continued smartly for more than an hour. During this operation, and for some hours after, a free use was made of a decoction of seneka, as a stimulant diaphoretic. Her respiration began to improve immediately on vomiting, and at the end of about four hours it was comparatively good; the skin open, natural warmth restored, and the circulation equalized. The patient was then put upon the use of the following powder:—℞. Pulv. ipecac. comp., scr. j; hydrarg. chlord. scr. j; camphor pulv., grs. xij; M. ft. chart. No. vj. One to be taken every four hours; a free use to be made of the decoction of seneka in the intervals, and the bowels to be moved after twenty-four hours.

The emetic did not produce purgation. No paroxysm of difficult breathing returned. In forty-eight hours my attendance ceased. I know of no other emetic substance that would have effectually met such a case. Ipecacuanha, sulphate of zinc, &c., would have proved too feeble at best; tartarized antimony would, I conceive, have been hazardous, from its nauseating and sedative effect, setting aside the uncertainty of its procuring emesis in any reasonable dose, and the almost certainty of its producing exhausting catharsis. I repeat, then, that in this form and condition of croup, my experience furnishes me with no substitute for the *turpeth mineral* as an emetic.

It has seldom, if ever, failed to vomit efficiently, when administered in a proper dose, in any of the various conditions of the stomach, and of the system, in which I have given it. It usually acts in ten or fifteen minutes, and the dose should be repeated at those intervals, if the first fail, which rarely happens. In efficiency and revellent power, it is not, perhaps, quite equal to the tartarized antimony; it is, however, vastly superior, in these respects, to ipecacuanha, or any other substance known to me. In safety, it is greatly superior to antimony. Its emetic operation usually continues from an hour to an hour and a half, accompanied and followed by none of the distressing nausea, prostration, and depletion of antimony; but, on the contrary, leaving the patient with the invigorated feeling arising from equalized warmth and circulation. In its emetic operation it has seldom, never, in my recollection, been accompanied or followed by catharsis. I have never known it to be violent, nor otherwise than entirely safe in its operation, although I have given it in much larger doses than are usually directed; nor have I ever seen salivation follow its use as an emetic. So safe do I consider it, that in urgent cases I have not hesitated to put my patient under its full emetic operation two or three times within twenty-four hours; nor have I seen ill consequences result from such practice. I am inclined to think that the dose should be somewhat larger than is usually recommended. From two to three grains may be given to a child two years old, and repeated in ten or fifteen minutes, until emesis is produced. If the first dose fails, the second usually acts as soon as it touches the stomach.

*Prov. Med. and Surg. Journal, June* 24, 1846, *p.* 288.

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76.—OBSERVATIONS ON COLCHICUM.—By M. Donovan, Esq.

[Mr. Donovan thinks the drying of the bulb interferes with its powers. Dr. A. T. Thomson says, "The acrimony on which its virtue depends, is partially dissipated by drying and long keeping, and completely destroyed by any heat above 212.°" The acetous extract, also, must be in a great measure destroyed, unless a steam-bath be employed. The vinum colchici of the three British pharmacopœias, is made from the dried bulbs, and therefore must be of inferior efficacy.]

I believe the most efficacious preparation of the bulb is the wine produced from it in its recent and undried state, as recommended by the late Sir Everard Home, who published three papers on it in the Philosophical

Transactions for 1816 and 1817. In these papers he has given an account of its preparation, and of its effects therapeutic and physiological. He directs two pounds of the recent bulbs, undried, to be macerated with twenty-four ounces of sherry wine in a gentle heat for six days.

He convinced himself, by repeated trials, that this vinum colchici operates in every respect like the eau medicinale in removing the pains of gout. In his own case the symptoms disappeared in six hours after taking the remedy; but with other persons they did not go off for twelve hours, or even twenty-four. He found that, like the eau medicinale, it diminished the frequency of the pulse 10 or 20 beats in a minute, in twelve hours after taking the dose; and this he considers the criterion by which we may ascertain that the constitution is under its influence.

With regard to the modus operandi of colchicum, he conceives that it produces its effects on the circulation, and not on the stomach. This he ascertained in the following manner. Thirty drops of colchicum wine were injected into the circulation, through the jugular vein of a dog. The pulse increased 40 beats in a minute, and intermitted: in seven hours he had a motion, and was well. In another experiment, the same dog got a double dose by the jugular, which produced much languor; but he recovered. He says that the effects on the dog were the same as on himself. In a violent fit of gout, he took sixty drops of eau medicinale, which he considers the same as wine of colchicum. He soon became hot and thirsty; in three hours the pain was much diminished: in seven hours, nausea came on: his pulse, which was naturally 80, fell to 60, and intermitted: and he became languid; but next day he was quite recovered.

In another experiment Sir E. Home injected 160 drops of colchicum wine into the jugular of a dog: the animal instantly lost all power of voluntary motion; the breathing became slow; and the pulse was scarcely to be felt. In two hours, the pulse rose from 80 to 150. In five hours after, he became very languid, and the pulse was very weak: he vomited some bloody mucus and died. The stomach and duodenum were found in a high state of inflammation. These facts Sir E. Home conceives to prove that the effects are exerted on the circulation, and not on the stomach, in the same way as every poison is known first to enter the circulation, before it specifically affects particular parts.

At the suggestion of Sir E. Home, these experiments on dogs were repeated, with eau medicinale in place of colchicum, by Mr. Gatcombe: and the results were nearly the same; which is a still further evidence of the identity of these two medicines. The colchicum bulb, Sir E. Home says, contains both extractive and mucilage, both of which, wine, in the first instance, takes up; but when the liquor is strained and allowed to stand, a considerable deposit is almost immediately separated. This deposit he found to be not only active but virulent; six grains of it given to a dog, by the mouth, produced vomiting and purging which continued for twenty-four hours, the latter evacuations of both kinds being tinged with blood.

Coinciding with the supposed identity of the eau medicinale which also lets fall a deposit, Sir E. Home concludes, from some experiments, that this remedy, when it contains the deposit suspended in it, produces double the irritation on the stomach and intestines that the clear vinum colchici does. He found that in an instance where he took a dose of eau medicinale, without having shaken the bottle, it was mild in its effects; but that the other half, which contained the deposit, when swallowed, on a different occasion, was very severe.

When the deposit is separated from the wine of colchicum, he found that it by no means becomes inert. On the contrary, the filtered wine cured a person, on whom it was tried, of a fit of the gout, as well as if it had been in it. These facts are of great importance, and require to be attended to in the use of this medicine; for we can separate the vomiting and purging portion from that portion which only exerts a specific action on the gout,

by removing the deposit from the eau medicinale or colchicum wine, according to the conditions of the patient's case; and this is more necessary in the use of the eau medicinale, as its violence has in some cases proved fatal. The sale of eau medicinale was some years since prohibited in France on account of a nefarious use to which it had been applied. The deposit is, most probably, as Sir E. Home and Mr. Brande suppose, a substance analogous to the deposit which settles from the juice of the wild cucumber named elaterium. This once separated, the juice becomes, like the filtered colchicum wine, mild in its operations.

Sir Joseph Banks, convinced by the evidence contained in these papers of Sir Everard Home, that the vinum colchici, from which the deposit has been removed, must be a less hurtful medicine than the eau medicinale, thought it a duty to himself and the public to make trial of it. When the gout in his left hand and in the joints of that side of the body was very severe, he allowed Sir Everard Home to give him ninety drops of the vinum colchici, and found that the symptoms of gout were sooner and more completely removed than they had ever been by the eau medicinale of which he had experience during seven years, having taken it regularly, and kept a regular account of the doses, their effects, and the intervals between them.

When the variable strength of the different preparations of colchicum, arising from age, climate, soil, season, and manipulation is considered, it becomes a question whether it might not be better to reject them all, and to introduce exclusively into the materia medica the active principle of the plant. Indeed, this idea has been already acted on in Italy. Professor Quadri recommends the employment of a proximate principle discovered by him in colchicum, which he calls colchicina, and which he found most useful in gout, and less inconvenient than the bulb. The production of known effects from a known dose would thus be as certainly insured as in the case of any other medicine. Another advantage would be, that, inasmuch as the antarthritic powers of the bulb cannot be always brought to bear on the disease on account of the veratria, which Pelletier and Caventou proved it to contain, we could then increase the dose without any second source of apprehension.

Colchicina possesses great energy. MM. Gregier and Hesse administered one-tenth of a grain to a cat, eight weeks old, which killed the animal in twelve hours, after varied and excessive suffering. The stomach and intestines were found violently inflamed. Until this change is made, the best preparation of the bulb is undoubtedly Sir Everard Home's wine, made from the fresh bulb, dug at the end of July, sliced thin, and the slices, as fast as cut, instantly thrown into the wine. It is a common practice with physicians, in this country, to direct wine of the seeds of colchicum in their prescriptions, as if it were officinal in our pharmacopœias. But no such preparation is in them; and the misconception, so very general on this subject, is productive of much uncertainty and inconvenience to the apothecary. The vinum colchici of the pharmacopœias, as already remarked, is made from the dried bulbs; not from the seeds: from the latter, a tincture is made; and, as it is one of great power, there ought to be no confusion connected with it.

I have known the seeds beaten into a mass with mucilage (a work of no small labour), and formed into pills, to act as a brisk cathartic, and to give complete relief in facial neuralgia. The acetum colchici of the pharmacopœias, neutralized with magnesia, and holding dissolved some sulphate of magnesia, is recommended by Sir C. Scudamore, in his Treatise on Gout, as the best formula. He says the combination is inoffensive to the stomach, and certain in its effects on the bowels. The dose recommended by him is half a drachm to one drachm and a half; and this, he says, never produces constitutional nervousness. I have taken two ounces, however, of the acetum colchici, within six hours, at two equal doses, without any

other result than an intermitting pulse. A gentleman, labouring under gout, took, on my assurance of the feebleness of this preparation, no less than eighteen drachms of it, in divided doses, every day, for six days, without any obvious effects. Should Sir Everard Home's wine of colchicum ever come into use, and his authority ought to be sufficient warrant for its introduction, the apothecary should keep it in two states, one with the deposit, and the other without it. *Dublin Med. Press, Sept.* 16, 1846, *p.* 182.

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### 77.—AMMONIA AS A VESICANT.

[The following is a recipe with directions for the preparation of M. Gondret's ammoniacal vesicant ointment, called "Pommade de Gondret:"]

In summer, take lard, 6 drachms; oil of sweet almonds, 2 drachms; tallow, 4 drachms. Melt by a gentle heat, and pour into a wide-mouthed vial with a glass stopper. Then add 12 drachms of liquid ammonia at 27° or 28°; put in the stopper, and shake it up. It should be kept in a cool place; but as the temperature gets lower, put 2 drachms less tallow, and 2 more of lard. This pommade produces vesication in three, four, or five minutes.

Dr. Gondret remarks, that he has employed this vesicant with much advantage in the treatment of cataract, applying it on the mastoid process, or forehead; but little favorable change has been perceptible in less than a month's persistence in the use of the remedy. As auxiliaries he has also employed cupping on the nape, dry cupping to the back or loins, ammoniacal ether or spirit to the eyelids, &c. M. Gondret states, that his pommade is still employed by M. Lisfranc for cataract and gutta serena in the Hopital la Pitié, Paris, and that he himself practised on these diseases with it at the Ophthalmic Institution, Moorfields, for several months, in 1838, during which period, he adds, Messrs. Turner, Grace, and several other London chemists, "prepared it for him in perfection." *Lancet, Sept.* 12, 1846, *p.* 306.

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### 78.—TO COVER PILLS OR EXTRACT OF COPAIBA WITH GELATINE.

This process, invented by M. Garot, is exceedingly easy and practicable, and it is surprising that it is not employed more generally in this country, as it much more effectually disguises the taste and odour, and interferes less with the solution of the medicine than the method of gilding or silvering usually practised. It is applicable to every substance capable of a pilular consistence; such as balsam, camphor, musk, assafœtida, mercurial and ferruginous preparations, &c. Two hundred pills can be coated with gelatine in an hour, and will be ready for use after the lapse of two hours. The pilular mass so coated remains soft for a much longer time than according to any other plan. The process is as follows:—Fix the pills on long fine pins; plunge them into thick purified glue placed in a hot-water bath; then remove them by a rotatory motion, and stick the pins in paste spread out on a slab, so that the pills may remain elevated in the air; as soon as fifty are thus treated, rotate them individually in the heat of a taper, to harden the external pellicle; pull out the point of the pin, and the process is complete.

*Med. Gaz., July* 17, 1846, *p.* 95.

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### 79.—INSTRUCTIONS FOR MAKING UNFERMENTED BREAD.

There can be no doubt that the proper making of bread is a matter of great importance to the health of the community. The author of the little pamphlet before us has paid particular attention to this subject, and he has

therein not only given the best rules for making this important article of food, but has also added to them some very judicious reflections. We give the following extracts :—

TO MAKE WHITE BREAD.

"Take of flour, dressed or household, 3 lbs. avoirdupois ; bi-carbonate of soda in powder ½ oz. Troy ; hydro-chloric (muriatic) acid (specific gravity 1·17) 5 fluid drachms ; water about 26 fluid ounces ; salt ¾ oz. Troy.

TO MAKE BROWN BREAD.

Take of wheat meal 3 lbs. avoirdupois ; bi-carbonate of soda, in powder, 4½ drachms Troy ; hydro-chloric (muriatic) acid, (specific gravity 1·17) 25 minims or drops ; water about 30 fluid ounces ; salt ¾ oz. Troy.

First, mix the soda and flour as thoroughly as possible, which is best done by shaking the soda from a small sieve over the flour with one hand, and stirring the flour all the while with the other. In general this will answer sufficiently ; but the end will be attained more certainly if the mixture be passed afterwards once or twice through the sieve. Next, dissolve the salt in the water, and add the acid to it—taking care to perfect the mixture by stirring them well together. Then, mix the whole intimately as speedily as possible, using a wooden spoon or spatula for the purpose. The dough thus formed will make two loaves somewhat larger than half-quarterns. They should be put into a quick oven without loss of time. This is most conveniently done in long tins. The oven should be made hotter than for common bread. A portable one, where there is no other, and a common fire will answer the purpose. About an hour and a half will be required for the baking.

Common bread, like every thing that has been fermented, ferments easily again, to the great discomfort of many stomachs, and not only so, but as 'a little leaven leavens the whole lump,' it communicates a similar action to all the food in contact with it. Unfermented bread being free from this defect, is beneficial to those who suffer from headache, acidity, flatulence, eructations, a sense of sinking at the pit of the stomach, or pain after meals, and to all who are subject to gout or gravel. It is also useful in many affections of the skin. These remarks apply to both varieties of the bread, but especially to the brown, which is further invaluable to all who are liable to constipation from torpidity of the colon, or large intestines, the common infirmity of the sedentary, and of those who have been accustomed to oatmeal diet in their youth. There are other cases in which the brown is calculated to do much good.'

The general belief is, that bread made with the finest flour is the best, and that whiteness is the proof of its quality ; but both these opinions are popular errors. The whiteness may be, and generally is, communicated by alum, to the injury of the consumer ; and it is known by men of science, that the bread of unrefined flour will sustain life, while that made with the refined will not.

Keep a man on brown bread and water, and he will live and enjoy good health ; give him white bread and water only, and he will gradually sicken and die. The meal of which the first is made contains all the ingredients essential to the composition or nourishment of the various structures composing our bodies. Some of these ingredients are removed by the miller in his efforts to please the public, so that fine flour, instead of being better than the meal, is the least nourshing ; and, to make the case worse, it is also the most difficult of digestion. The loss, is, therefore, in all respects, a waste ; and it seems desirable that the admirers of white bread (but especially the poor) should be made acquainted with these truths, and brought to inquire whether they do not purchase at too dear a rate the privilege of indulging in the use of it. The unwise preference given so universally to white bread, led to the pernicious practice of mixing alum with the flour, and this again to all sorts of adulterations and impositions ;

for it enabled bakers, who were so disposed, by adding more and more alum, to make bread made from the flour of an inferior grain, look like the best or the most costly, and to dispose of it accordingly; at once defrauding the purchaser, and tampering with his health. It is one of the advantages of the effervescing process, that it would put an end to all such practices, as its materials and alum are incompatible.

Among the matters removed by the miller are the larger portion of the saline substances, which are indispensable to the growth of the bones and teeth, and are required, although in a less degree, for their daily repair. Brown bread should therefore be given to nurses, and to the young or the growing, and should be preferred by all, of whatever age, whose bones show a tendency to *bend*, or who have weak teeth.

It is believed that brown bread will generally be found the best by all persons who have sluggish bowels, and stomachs equal to the digestion of the bran. But with some it will disagree, for the bran is too exciting to irritable bowels, and is dissolved with difficulty in some stomachs. When this happens, the bran should be removed, either wholly or in part; and by such means the bread may be adapted, with the greatest ease, to all habits and all constitutions. With this proviso (except, perhaps, in some cases of calculus) the least refined, or rather the more natural, will be preferred by all who have an enlightened regard to health and economy."

*Monthly Jour. of Med. Science, June*, 1846, *p.* 459.

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80.—A CHEAP SUBSTITUTE FOR A VAPOUR BATH.

Dr. Serre (d'Alais) recommends the following means of inducing abundant transpiration:—Take a piece of quick-lime, about half the size of your fist, and wrap around it a wet cloth, sufficiently wrung to prevent water running from it. A dry cloth is to be several times wrapped around this. Place one of these packets on each side of the patient when in bed. An abundant humid heat is soon developed by the combination of the lime with the water, which quickly induces copious transpiration; the effect of the apparatus lasting for two hours at least. When sweating is fully established, we may withdraw the lime, which is now reduced to a powder, and is easily removed. In this way, neither copious drinks, nor loading the bed with coverings is required.—*Medico-Chirurgical Review.*

*Lancet, May* 16, 1846, *p.* 555.

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81.—BEST MEANS OF AVOIDING THE TASTE OF NAUSEOUS MEDICINES—By Dr. Ure.

The best plan of giving solids is by means of *wafer paper*, which, according to Dr. Ure, is made in the following manner:—"A certain quantity of fine flour is to be diffused through pure water, and so mixed as to leave no clotty particles. The pap is not allowed to ferment, but must be employed immediately it is mixed. For this purpose a tool is employed, consisting of two plates of iron, which come together like pincers, or a pair of tongs, leaving a small definite space betwixt them. These plates are first slightly heated, greased with butter, filled with the pap, closed, and then exposed to the heat of a charcoal fire. The iron plates being allowed to cool, on opening them the thin cake appears dry, solid, brittle, and about as thick as a playing card." We meet with it in small sheets, of a light colour, breaking easily when dry, but tenacious and moulding itself easily to the substance it covers when wet, increasing but slightly its bulk. When any powder is to be taken, it must be mixed with syrup or other tenacious substance to the consistence of a bolus, and the patient be desired to break off as much of the paper as may be necessary to envelope the substance; dip

it (the paper) in water, lay it on a plate or clean surface, and then place the electuary in its centre; fold the corners carefully over it, and swallow it by drinking a little water. Some persons have suggested putting the powder on the paper, and folding it without wetting the powder. This I should not, however, recommend, or an exposure of the mixture might result, much to the disgust of the patient, and the injury of the method. Those who are unable to swallow pills can manage to bolt these boluses covered with wafer paper; they slip down the throat easily, as would an oyster, and do not produce that convulsive action of the muscles of the larynx and pharynx which frequently attend the effort of swallowing pills. I would strongly recommend the use of the wafer-paper as an envelope for scammony, when prescribed for children—a medicine so frequently producing nausea. It is equally applicable for taking the compound powder of jalap, or any other substance prescribed, in drachm or half-drachm doses.

*Lancet, May* 30, 1846, *p.* 603.

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# SURGERY.

## FRACTURES AND DISEASES OF BONE.

82.—TREATMENT OF FRACTURES.—By Robert Liston, Esq., F.R.S. &c., &c.

The object of the surgeon in the treatment of all fractures must be to obviate pain and suffering, to put the parts in the most favourable condition for being repaired, and to preserve the limb of its normal shape and length. All these indications are fulfilled by the same means, viz., instant coaptation, and retention of the broken ends in the most perfect possible apposition. The earlier the means are adopted, the greater and more immediate will be the patient's relief from suffering, and the less the surgeon's anxiety and labour; excess of bloody and serous effusion will thus also be prevented, and the excited action kept within bounds. Prevention, it is admitted, is always better than cure; and if the above recommendation be attended to, all necessity for local abstraction of blood, and for the use of lotions to cool the part, will be obviated. If, on the contrary, the limb is laid loosely on a pillow, in an easy position, as it is by some thought and said to be, muscles relaxed, &c., and no efficient means are allowed to prevent the spasmodic action of the muscles, the startings of the limb, the jerkings of the broken ends, and the displacement of the fragments, then, assuredly, in spite of all local and general measures, there will arise frightful swelling, pain, tension, and heat; the intermuscular tissue will be gorged with blood, and the circulation of the limb roused to a dangerous and alarming degree. No application of soap plaster, in strips, gently around the limb, "by causing secretion underneath it," can reasonably be supposed likely to diminish either the irritability of the muscles or the urgency of the inflammation; nor will it. The splints, when resorted to, must be put upon a swollen and distorted member.

*British and Foreign Med. Review, Oct.* 1846, *p.* 369.

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83.—FRACTURE OF THE CLAVICLE.

Two difficulties are met with in the treatment of this accident; the maintenance of the fragments of the bone immoveable, and the procuring a regular callus. Desault's bandage does not entirely fulfil these conditions,

but M. Blandin obtains them by rendering this apparatus immoveable by means of dextrine. Six cases have just been treated by him at the Hotel Dieu, and in one only, this patient being delirious from a wound of his head, was the success incomplete. In the others, when the bandage was removed, it was difficult to point out the side upon which the fracture had occurred, no angle or projection whatever being visible. It might be supposed that an immoveable bandage of this kind would prove very irksome to the patient. It does not: for, owing to the fragments being maintained *in situ*, he suffers less; and there is no necessity to renew or tighten the apparatus every few days, as would otherwise be the case. Care is of course taken to guard the armpits, and other parts which the stiff bandage would irritate, by means of compresses. In private practice, M. Blandin causes the patient to wear a somewhat tight flannel-waistcoat, over which he applies the bandages; and with the skin thus protected, the most delicate females experience no inconvenience from it.

*Medico-Chirurgical Review, Oct.*, 1846, *p.* 458.

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84.—TREATMENT OF FRACTURES.—By F. A. Bulley, Esq.

[During the reading of the Retrospective Address to the Reading Pathological Society, July 8th, 1846,]

Mr. Bulley exhibited an apparatus which he had lately constructed for the more efficient treatment of fractures of the thigh bone. The mechanical extensile power in this apparatus, by means of a foot piece moving on an endless screw, was so arranged, that the necessary traction should be equally divided between the foot and the lower end of the fractured bone, because he had found that in many of the cases he had witnessed, where the extension had been practiced wholly by the foot, the knee-joints, from its having been kept for a long time upon the stretch, had remained inflexible and useless long after the bone had been united, which constituted, he thought, a serious objection to this method of treatment, and also, because it was thought by some parties, that traction employed only through the medium of the broken bone itself, would be a better mode of treating these accidents.

But he could prove that, to produce the necessary extension in this way, a greater amount of extending power, owing to the shorter leverage employed, would be necessary; and to obtain this, the pressure upon the thigh above the condyles, would interrupt the venous circulation and cause œdema of the leg, which, when traction was used in this way, and especially by the apparatus of Dr. Jarvis, was placed on a double inclined plane, in a depending position. He therefore proposed to remedy these inconveniences by a division of the tractile forces, so that half should be expended upon the thigh-bone itself, and half upon the foot.

The peculiar mechanism of the apparatus would insure these effects. He particularly recommended it, as it was capable of insuring an easily-regulated extension, while at the same time the broken limb was constantly under the observation of the surgeon, which was not the case with Liston's, or, indeed, any of the splints in ordinary use. He would apply this mechanism to all cases of fracture of the thigh, in whatever portion of the bone they might occur; and in order that the traction of the lower broken end of the bone may be made in as direct a line with the upper end as possible, he would suggest that the foot, with the whole limb, should be kept more or less raised during the process; for instance, if the bone was broken near the trochanter it would be necessary to raise it very greatly, while, on the contrary, if broken near the condyles of the bone, a very slight elevation would be sufficient, or perhaps none at all would be required. The lateral splint, in connection with the upper part of the apparatus, was acted upon by a force which pressed it inward toward the thigh, thus preventing the

bowed or excurvated appearance of the limb, which occasionally followed these accidents.

Mr. May said that, in the majority of cases, which had occurred to him, the straight splint of Liston seemed the best to be adapted to the treatment. The rule which guided him was to place the limb in that position at first, which seemed best to suit the apposition of the broken bones. In all cases of fractured thigh he considered it best not to be in a hurry to put it up. He generally placed his patient in the easiest position on the side, and, having placed the ends of the fractured bone in apposition, left it for a week or ten days, until the contractility of the muscles had subsided and the inflammation disappeared. He then, having carefully enveloped the limb in several folds of bandage, so as to prevent the injurious effects of pressure, applied the straight splint, and lashed the limb to it, and it rarely, if ever, required to be touched afterward. He then placed the patient on the revolving bed, especially if he was an old person, to prevent the sloughing which might probably ensue. *Prov. Med. and Surg. Journal, Sept.* 23, 1846, *p.* 449.

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85.—CASE OF SPINA BIFIDA CURED BY OPERATION.

M. Latil de Timecour was called, in January, 1845, to an infant, aged two months, which presented a tumour seated in the sacral region, and which, from the size of an apple, at its birth, had gradually acquired the volume of a fœtal head. Moreover, the left leg was paralysed, and there existed on the same side a club-foot—varus equinus. The base of the tumour was compressed between two rods of wood, directed in the line of the vertebral column, and at first brought into single apposition. It was then emptied by means of a trocar, and while the liquid was flowing the pieces of wood were brought more and more together, in such a manner as to bring the two serous membranes in contact.

The tumour shrivelled, and soon became gangrenous, without any serious consequences, and upon the fifth day the gangrenous portions were removed upon a plane with the rods of wood. Cicatrization was interrupted by a kind of fistulous opening which allowed the flow of the rachidian fluid, and moreover, a sort of hernia of the medulla spinalis, which it was necessary to tie. The rods were removed on the tenth day, and on the fifteenth the second ligature fell off of its own accord. Dating from this time, the cure proceeded rapidly, and seven months after the operation the infant had acquired its proper development. The lumbo-sacral cicatrix was scarcely apparent; it appeared to repose upon a cartilaginous tissue, which might, perhaps, be the commencement of vertebral ossification.—*Gaz. Med. Chir., No.* 1, 1846, p. 6.; and *Gazette Medicale.—Med. Gaz., Aug.* 21, 1846, *p.* 343.

[Two cases were brought before the Manchester Pathological Society, by Mr. Dumville. One was of a child five months old. The arrest of development was from the third lumbar to the second sacral vertebræ, which gaped widely. The sac was capable of holding an ounce of fluid. The tumour was punctured at the urgent wish of the friends, and the child died.]

In the second case the congenital deficiency was situate in the same locality. He evacuated the sac by puncture, and the recovery was complete. The child, which was nine months old at the time of the operation, has now attained eighteen months, and its health is unexceptionable. The operation was quickly followed, in this instance, with profuse perspiration; the face immediately became deeply congested, and there was much derangement of the stomach, attended with vomiting. The child was very fretful, had excessive twitchings, but no distinct convulsion. When the sac was quite empty all the symptoms were aggravated; but on becoming again distended with secretion, which occasionally took place in consequence of mechanical obstruction of the aperture, the symptoms underwent

amelioration. The discharge of fluid, with more or less of the symptoms described, having lasted fourteen days, the orifice then healed over, and no further secretion of serum following, the child convalesced without any relapse. This case he adduced rather as an exception to, than as an example of a general rule. Judging from the aggravation of the symptoms whenever any excess of the fluid happened to drain off, it would appear that too much precaution cannot be taken in order to secure the evacuation of the sac as gradually and in as constant a manner as possible, in these cases, and that the plan of operation most suitable for the attainment of this desirable end should be adopted, and, above all, timely put in practice.

*Med. Gaz., Sept.* 25, 1846, *p.* 549.

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## DISLOCATIONS AND DISEASES OF JOINTS.

86.—DISLOCATIONS OF THE HIP.—By J. C. Davie, Esq., Haddenham.

[Mr. Davie feels it his duty to publish these cases, and to suggest a new instrument for the reduction of dislocations of the hip, from having seen the best directed efforts fail in reducing them, and he mentions two cases in the Gloucester Infirmary which remained unreduced, from a deficiency in the mechanical means employed. He says, "I have of late had opportunity of examining an old accident of this kind, which strengthened my opinion. It is no uncommon circumstance, he continues, though a wrong direction be given in the extension, for the adducent muscles to draw the head of the bone into its pristine situation.]

The objections to the remedial appliances which are most frequently used in the displacement of the hip-joint, especially those necessitating extension downwards, appear to be the following—1st, the pelvis is not made a complete fixture; 2nd, the single pad just above the knee, buckled or tied by tapes, cannot withstand the force of pullies; and, 3d, in making the extension the hand is liable to fatigue, and it is impossible to effect it in the same gradual and precise manner as by the means I have resorted to, and which, I doubt not, will be acknowledged by all competent authorities, to be the most eligible for the well-being of the patient.

In the treatment of this accident, where there is so much muscular power to contend against, for the extension to be rendered efficient, the pelvis should be immovably fixed to some unyielding substance, and it it is equally important that the apparatus above the knee, to which one of the pullies is attached, should retain its hold. I will, therefore, endeavor to exemplify the surgical mechanism I have employed, and which, I think, will supersede those in ordinary use.

In the first place the operator should have at his command a plank or planks of oak, beech, or elm, eight feet in length, three feet in width, and three inches in thickness, which should rest upon chairs, or upon tressels. If composed of two boards, they should be joined together by joists. Whatever position the patient is placed in, holes should be drilled in opposite directions, so that the ilia and unaffected thigh may be environed by two strong leather straps; cloths of any soft texture should be applied next the skin to prevent fretting, thus rendering the pelvis a complete fixture, enabling the effective means, the extension and uplifting the head of the femur to be used with the greatest advantage. 2nd. In cases of dislocation upwards on the dorsum ilii, upwards and backwards into the ischiatic notch, and forwards on the body of the os pubis; to obviate the inconvenience of frequent readjustment, and much grievous annoyance, instead of the single pad above the knee, I have substituted two iron plates, fashioned to the configuration of the lower part of the thigh, just above the condyles, movable by a joint, and on the other side fastened by two thumb-screws. That portion of the under plate which approaches the leg, should be turned back, in

order to avoid the disagreeable consequences of pressure, the soft parts being previously protected by a wetted cloth, the leg bent, and held by an assistant, which serves to keep the instrument in juxta-position, as well as to produce flaccidity of the muscles. This metallic implement might be padded with wool, covered by wash-leather, at the discretion of the surgeon; for my own part I prefer it in the rough state. 3rd. At the distal extremity of the board, an upright post is fixed, twenty inches in height, and from three to four inches in thickness, through which there is a central hole for the pulley-rope to pass, and another laterally for a stick or windlass, which may be worked with cogs, or by a roller and ratchet wheel. One of the pullies is attached to a hook in the front plate, and the other to a staple in the upright post. The cord of the pullies must be tensely drawn, and the extension then commenced, which can be made in the most gradual manner.

As a general rule, I consider the line of direction in the reduction of the several dislocations of the hip-joint, laid down by the late Sir Astley Cooper, the best that can possibly be devised, no doubt occasionally requiring modification, as the head of the bone is not at all times so favourably located, being locked to some bony process, which tact and experience will readily dictate. The metallic implement for the attachment of one of the pullies, will be found to be of eminent advantage in the readjustment of accidents of this kind, where the extension is required to be made downwards and outwards. I have nothing to add to the ordinary remedial agents employed in the displacement of the head of the femur downwards into the thyroid foramen, except that, in a recent case, where the articulating extremity of the bone cannot be moved from its new situation by uplifting it, and, at the same time, making a lever of it, by carrying the affected member over its fellow, the same means can be tried more efficiently by having the pelvis fastened to the board, and, if the head of the bone cannot be raised by the efforts of the surgeon and assistants, extension upwards with the pullies attached to a strap around the top of the thigh, approaching to a transverse line, would be effectually accomplished by having the upright post fixed at a convenient angle. The legs of the board and upright post or pillar might be made with screws, so that they can be removed as circumstances require.

Should this apparatus be approved by the surgeons of general hospitals, each institution ought to be provided with three or four pairs of the metallic plates of different sizes, that the instrument may be readily adjusted. To general practitioners, who are situated at too great a distance from an hospital, I would recommend each gentleman to have in his possession leather straps, a compound pulley, a pair of iron plates for middle stature (two or three different sizes would be better), and an upright post or pillar, which I will describe.

Having these requisites at hand, the tables or planks will be readily procured. The pillar is twenty inches in height from the rester, and three inches and a half in thickness, with a screw from five to seven inches long. At the base of the pillar is a flat piece of wood, which I have termed the rester, and a large wooden nut, moveable by two handles, the screw passing through the rester, a table or board, and the nut, by means of which the pillar is rendered a complete fixture. At the upper part is a mortise for the admission of a roller, moveable by a spindle and crank, the former acting upon an iron plate on each side of the post, passing through the centre of a ratchet wheel, and retained there by a small iron nut. In order to render traction continuous, there is a hole in the roller for one end of the pulley-rope to pass through, which is fastened by a knot at its extreme point. A little below the mortise a metallic eye is fixed for the attachment of one of the pullies. Gyration is regulated by the ratchet-wheel, click, and spring. By depressing the click, retrocession and relaxation can be momentarily produced. Extension may be thus enforced to any degree, being com-

pletely under the control of the operator, and can be performed as rapidly or slowly, as the circumstances of the case demand.

Before the special treatment is commenced in a strong athletic subject, or in displacement of long standing, the preparatory and accessory measures, I am convinced, are of the greatest moment—viz., the warm bath, depletion, and nauseating doses of tartarized antimony, as tending to exhaust the muscles, checking undue reaction, and other perilous consequences, but the re-adaptation can only be looked for from the skillful ingenuity of the surgeon. *Prov. Med. and Surg. Journal, Sept.* 30, 1846, *p.* 461.

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87.—COMPOUND DISLOCATION OF THE ANKLE.—By E. Copeman, Esq., Coltes-hall.

[This case came under the care of Mr. Copeman, June 20, 1846, and the following is its history:]

The patient, on driving a load of hay through a gateway, his foot became entangled against the post, and the wagon wheel coming in contact with the outside of the foot, forced it inwards, so as to dislocate the joint, the gate-post being the point of resistance. I found the foot very much turned inwards, the inner malleolus fractured off, and, with the astragalus resting against the inner side of the tibia, some way above its extremity. The external malleolus was crushed by the wheel, and the lower end of the tibia and fibula, minus the two malleoli, projected through a wound in the integuments, to the extent of more than an inch at the outer side. There was a free oozing of blood, but no large vessel opened. The cartilage covering the lower end of the tibia was visible, being exposed outside the wound, and the wound in the integuments was more than two inches long. With the assistance of my partner, I made several attempts to reduce the dislocation, but failed. In order to give the man every chance, I requested a consultation with Mr. Crosse, before proceeding to any other means of relief.

Several hours elapsed before Mr. Crosse could reach the house; on his arrival, he advised another trial at reduction, and then, if not successful, the removal of the projecting portions of the bones. However, in our next attempt, we fortunately succeeded in restoring the bones to their natural position; the wound was then closed with two sutures, and covered simply with a piece of lint. A splint was applied along the inside of the leg and foot, secured by a few separate pieces of bandage, and the limb placed on a box in the same position as when reduced—viz., the thigh almost at right angles with the body, and the leg at right angles with the thigh, resting on the calf and heel. Cold water to the leg, as an opiate.

24th. Up to this time scarcely any local or general disturbance; bowels acting; no fever; no medicine; limb in very good position, and not painful; kept cool with water, and occasionally fanned; wound favorably situated, being, after reduction, somewhat above the level of the joint.

27th. Removed the sutures; health quite good; limb easy and not inflamed.

July 2d. No illness, pain, or swelling; no suppuration. All going on marvellously well.

24th. Just in the same quiet state; wound healed.

In six weeks from the accident the splint was removed, and he got down stairs; and to-day, August 17th, I found him walking in his garden, able to bear considerable weight upon the limb, and possessing a good deal of power to move the joint: so much, that I believe in a short time he will suffer no inconvenience whatever from the accident. There is neither swelling nor deformity of the ankle, and the man has really not suffered an hour's illness since his dislocation was reduced. Sir Astley Cooper has drawn particular attention to the probability of recovery from compound

dislocations of the ankle, without amputation, but he remarks that, "under the most favorable circumstance, three months elapse before the patient can walk with crutches; in many instances, a greater length of time is required." The same surgeon states that, "the dislocation of the tibia, at the outer ankle, produces much more injury and danger than that at the inner, and amputation will be more frequently required for it, because both the bones and soft parts suffer more than in the dislocation inwards."

The case I have quoted is an example of a very rapid, uninterrupted, and perfect cure of the kind of dislocation which is thus said to produce the greater amount of injury and danger, and is well calculated to corroborate the now prevailing opinion, that amputation is not necessary in a majority of compound dislocations of the ankle-joint.

*Prov. Med. and Surg. Journal, Sept. 16, 1846, p. 443.*

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88 —TREATMENT OF DISEASES OF THE JOINTS BY IODINE INJECTIONS. —By M. BONNET, Lyons.

[In Retrospect, Vol. VII., Art. 75, we referred to some of the suggestions of M. Bonnet on the treatment of joints, especially with respect to the injection of iodine.

This mode of treatment has recently been very popular amongst the French surgeons. M. Velpeau and M. Bonnet each seem to claim the priority in this mode of practice. It was in the treatment of hydrocele that M. Velpeau first used iodine; he considered that in addition to creating adhesive inflammation in the sac, it might be beneficial in removing serous collections, depending on congestion or hypertrophy in some adjacent organ, and not only in this respect be more useful than wine, but also not be so liable as that fluid, to produce gangrene when infiltrated into the loose cellular tissue. Indeed, when he injected it into the cellular tissue of animals it seldom produced suppuration. He afterwards extended its application from simple hydrocele to congenital hydrocele, and hydrocele of the hernial sac; he also used it with success in two cases of serous cysts in the iliac fossa, in an encysted sero sanguineous collection behind the uterus, and in serous cysts situated in various parts of the body, and in several cases of encysted goitre. He further employed it in two vast purulent collections. He next tried it in tumors of the synovial sheaths of tendons. He afterwards determined to treat hydrarthrosis with iodine injections. In speaking of the mode of doing this, the British and Foreign Medical Reviewer observes:]

To inject the knee-joint the leg must be extended. M. Bonnet pinches up a fold of the skin and passes in a hydrocele trocar at the base of this fold, in order that when the operation is complete the external and internal puncture shall not correspond, and thereby admit air. M. Bonnet also always holds the trocar as vertically as is consistent with the escape of the fluid, as air can scarcely enter while the trocar is full of liquid. M. Velpeau neglects these precautions, as he is satisfied by experience that the admission of a few bubbles of air is harmless. Both agree that it is not of much consequence at what point the joint is perforated, but prefer the upper and outer part of the joint, or rather whatever point fluctuation may be most evident at. M. Bonnet seems to use an ordinary trocar; M. Velpeau attaches great importance to employing an instrument not larger at the utmost than a hydrocele trocar. M. Bonnet merely allows six or eight drachms of synovia to escape, a quantity, in fact, equal to the bulk of the injection he throws in; M. Velpeau, on the contrary, empties the joint as completely as he can. M. Bonnet in almost every case injected pure tincture of iodine, calculating on its being diluted by the fluid left in the joint; M. Velpeau injects tincture of iodine diluted, it is not precisely said to what extent, but it would seem with from two to four parts of water. M. Bonnet allows

either the entire or the greater part of the fluid to remain in the joint after the injection has been performed; M. Velpeau, on the contrary, seems to allow the whole of the injection to escape—we say *seems*, for there is great want of precision in many of M. Velpeau's statements. M. Bonnet would in future prefer M. Velpeau's method, as it excites greatly less inflammation than occurred in his own cases.

[Considerable pain is felt during the operation, and inflammation in the joint, and fever ensue. In reporting one of his cases M. Bonnet observes:]

The inflammation ran on with alarming rapidity and intensity. The patient shrieked with pain during the entire day. Forty leeches were applied in the evening without giving any relief. The swelling, which was much greater than before the operation, was rapidly increasing. The tension of the skin was extreme. At seven in the evening, alarmed at the rapid increase of the swelling, I could devise no other expedient to restrain it than again plunging the trocar into the joint. And in another case, the inflammatory reaction was intense; during the night there was fever, restlessness, and even commencing delirium. The joint swelled, and the skin was red, tense, and burning; nausea and vomiting set in, and those symptoms lasted three days.

[Although M. Velpeau considers that the iodine injection never causes suppuration when injected into a close cavity, nor gangrene when it escapes in the cellular tissue, it appears that the experience of others does not agree with this, since both these occurrences have taken place, and death been the result. The reviewer adds:]

It appears, then, that the iodine injection may produce precisely the same mischiefs that may follow the employment of wine and other stimulant injections proposed to be superceded by it; and we fully agree with MM. Blandin, Roux and others, that though no mischief is yet known to have occurred from injecting it into the joints, disastrous results must inevitably follow from perseverance in the practice. There are few proceedings in medicine or surgery, however hazardous, which cannot be supported by an array of successful cases; and we would just as soon infer the safety of injecting the knee-joint in hydrarthrosis from the cases we have enumerated, as we would infer the safety of passing a seton through the knee in the same disease from the result of ten cases reported to have been so treated with success by Dr. Muller. (Gaz. des Hop., June 1842.)

We have entered rather fully into the question of iodine injections, as they are now very extensively used on the continent, and the confidence with which M. Velpeau and others proclaim their constant safety and almost constant success, is calculated to induce others to imitate their boldness. We may here mention, as illustrations, how indiscriminately these injections are employed by some, that Dr. Suytgaerens, of Puyers, after performing paracentesis of the thorax in a case of empyema, repeatedly injected the pleura with an iodine injection, the result, we must add, was favorable, and the patient recovered.

More recently, M. Dieulafoy, of Toulouse, in a case of ascites, threw a quantity of iodine injection into the peritoneum, and, after diffusing it over the entire cavity, drew off about half the quantity of fluid injected. Febrile reaction, with slight pain in the abdomen, followed; cataplasms and mercurial frictions were directed. A month after, about half the cavity of the peritoneum seemed obliterated, but the fluid, having again collected superiorly, the injection was repeated with similar consequences. In about six weeks a small quantity of serum had accumulated, forming a circumscribed globular tumor; a third injection produced the same febrile and inflammatory symptoms. The ascites now finally disappeared, and was replaced by general anasarca, which yielded to purgatives. The patient ultimately recovered after a long convalescence, and experienced no inconvenience, save a dragging sensation in the abdomen on assuming the erect position. Finally,

to conclude this subject, it may be noticed that, during the academic discussion so often referred to, it was suggested by MM. Laugier and Caventou, that the stimulant effects of diluted tincture of iodine was solely due to the alcohol it contained, and that the iodine was, so to say, mere surplusage. It may be, and we incline to the opinion, that there is nothing special in the local action of iodine, but unquestionably it powerfully contributes to the stimulant properties of those injections, as might be inferred from its action on the skin, and as it is directly proved by the fact, that M. Bonnet has sometimes employed an injection composed of iodine, iodide of potassium, and water, and found that it excited active inflammation.

*British and Foreign Med. Review, July*, 1846, *p.* 70.

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89.—VALUE OF POSITION AND MECHANICAL SUPPORT IN THE TREATMENT OF DISEASED JOINTS, WITH SPECIAL REFERENCE TO THE KNEE-JOINT.—By Anthony Colling Brownless, Esq., M. R. C. S. E., London.

[The subsequent usefulness of diseased joints depends, 1st, upon the position they are allowed to assume during the active stage; and 2ndly, upon proper support in the convalescent stage, when the activity of the disease being subdued, the patient is beginning to use the limb.

In regard to restraint of position during the treatment, it is true that many circumstances may render the restraint undesirable, but it is equally true that by attention to position very serviceable limbs may be procured.

Mr. B. adduces examples to show how unsightly and comparatively useless the limbs may become by inattention to position and mechanical support, viz., anchylosis of the hip-joint with the thigh flexed, or that of the knee with the leg flexed upon the thigh, and he considers that the straight position is the most sightly and the most useful.

He considers restraint to motion prudently and judicously applied an agent of the highest importance, and especially when used for the joints of the lower extremity, and above all the knee-joint, because in cases of inflammation of the synovial membrane, or ulceration of the cartilage, there is much spasmodic action of the muscles which occurs especially during sleep. Even in diseases of the wrist or finger joint, the patient is relieved of the pain, and the cure is facilitated by it.]

During the active progress of disease, any splint or apparatus which will at once maintain the joint in a desirable position, prevent any considerable motion, and be comfortable to the patient, will fulfil all our intentions. Perhaps the strong pasteboard or undressed leather splint, adapted to the part whilst wet, and afterwards softly padded with lint, or, what is better, goldsmith's or jeweller's wool, will answer as well as anything else, it being light, and, at the same time, giving good support; but whatever the apparatus may be, no pains should be spared in fitting it in such a manner to the part as to be perfectly easy to the patient, at the same time that it gives steadiness to the limb, by extending sufficiently above and below the joint. I feel confident from my experience that great benefit may be derived to diseased knee-joints under active treatment, by placing them in an apparatus of this kind, fitted to the back part of the limb. The limb should lay in a sort of case, which should be long enough to receive the calf of the leg, and also extend well up the thigh. The apparatus I shall presently mention for the after-treatment should be much shorter, for, during the progress of the disease we have no wish to facilitate the movements of the muscles, whilst in the after-treatment we wish to give them every opportunity of recovering as much tone as it is possible for them to regain, at the same time that we do not sacrifice, for the hope, often futile, of their recovery, the permanent utility of the limb. If the apparatus of which I have spoken be not too high at the sides of the joint, and care be taken to pare away the leather with a knife at any part where it may press too much at the side of the ar-

ticulation, no inconvenience can be experienced from pressure on the inflamed joint, even in the most active state of the disease.

Some may say, is not Mr. Scott's plan adopted in the cure of diseased knee-joints? and does not that give support and prevent motion? Mr. Scott's plan is very good, so far as it will reach, and no doubt owes much of its success to the check it gives to movement in joints, but in practice it is applicable only to a very limited number of cases, even could it be borne in all by the patients; and it will certainly not be half so effectual in preventing the limb contracting a bad position, as properly-adapted splints, of undressed leather or pasteboard, which have also another great advantage —viz., that of being convenient for the application of local remedies to the affected joint.

By the use, then, of this plan to diseased joints, we obtain, more or less, the following important ends:—First, the alleviation of the sufferings of the patient; secondly, the lessening the liability to repeated attacks of inflammation, and, consequently, thirdly, the acceleration of the cure; fourthly, the prevention of deformity if the disease terminates in anhcylosis, partial or complete; and, fifthly, the ultimate utility of the limb.

*After-Treatment.*—After severe disease has been arrested in a joint receiving the weight of the body, the knee more especially, deformity often occurs, and the usefulness of the joint is more or less lost by want of support at the commencement of the use of the limb. If a patient is confined for a length of time without using a limb, the muscles become enfeebled or atrophied, by long disuse, and are unable to act with sufficient power to preserve the proper relations between the bones of the joint, weakened as the latter often is by the changes which have taken place in the ligaments from disease.

In the case of the knee, the evil is not confined to this joint only, but to remedy the impediment to walking, and to counteract the obliquity caused by its displacement, and, to enable the limb to support the trunk, the ligaments of the ankle-joint and tarsal articulations yield, and we have distortion of the foot resulting. The danger of these evils is much lessened if proper support be given to the knee before walking be at all permitted. I know of no better support for a knee-joint than to envelope it in splints of leather, undressed with oil, first softened in water, and allowed to remain on to harden in the exact shape of the joint, when the edges should be rounded and the splints covered with soft wash-leather; a large piece of new jeweller's wool is then to be laid over the patella and upper part of the joints, to prevent too much pressure of the edges; the splints are afterwards to be applied and fixed by a roller of strong stuff attached to the end of one of the splints, and passed round and round the joint. Everything depends upon making it very comfortable to the patient, by paring it where it presses, and having a good layer of wool to guard the skin over the patella; if not, it is quickly thrown aside, or worn with pain and inconvenience.

This plan of supporting convalescent joints with splints of undressed leather, is no novelty, for Mr. Stanley was kind enough to show me the value of it some years since; but, notwithstanding the adoption of this simple and most excellent plan by some surgeons, by the generality of practitioners it is never employed, and, perhaps, hardly known, although I do not think they have anything half so efficacious to supply its place. Knee-joints are strapped with various kinds of plaster, and rolled; but the support given by these means is quite inadequate where the joint has suffered any considerable disorganization, and consequently, deformity is constantly occurring when patients begin to walk after serious disease of the knee-joint.

Besides giving great support to the joints in walking and standing, resisting the tendency to displacement, and consequently, preventing deformity, the leather apparatus is particularly serviceable in cases of partial anchylosis of the knee-joint, more particularly where adhesive bands have

been formed, which are liable to be stretched and even torn, and fresh inflammation to be set up from every little slip in walking, if the joint be not guarded by an efficient apparatus. No strapping or rolling can preserve a joint from the effects of these accidents so well as the leather case. Being firm, it preserves the joint also from external violence; and lastly, consider this apparatus very valuable, by supplying an immediate, or rather, we may call it a prophylactic remedy for inflammatory attacks.

*Lancet, Aug.* 29, 1846, *p.* 242.

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90.—TREATMENT OF BURSAL DISEASE OF THE KNEE-JOINT. —By F. C. SKEY, Esq., F. R. S.

[Mr. Skey's remarks relate to that form of disease which affects the bursa placed anterior to the patella, and the ligament below it, commonly known under the title of housemaids' bursa. The bursal disease of the knee presents itself for treatment in the form of a general swelling of the sac, containing serous or puriform fluid. If unattended with pain, the contents will probably be serous merely, and the tumor soft. It is in this stage that blistering may be objectionable. As the disease advances, the mass consolidates by repeated attacks of inflammation, more or less acute, till the swelling becomes a large tumor of nearly solid consistence. As to the communication of bursæ with the contiguous joint, any operation, in such case would be very objectionable. But such communications are exceedingly rare, nor can Mr. Skey call to mind any example of the kind, except that between the tendons of the subscapularis and the shoulder-joint, which might rather be deemed an extension of the synovial membrane of the joint under the tendon.]

Diseased bursæ, not communicating with a joint, may, I believe, be opened without danger in all situations, and in every stage of their disease. The cavities of the body, when morbid in condition, appear to be exempt from the often frightful consequences of puncture, or other form of injury, that may attack them during health. An accidental puncture into any of the larger joints is often fatal to the articulation; acute inflammation follows, destruction, and finally anchylosis. A diseased joint, on the other hand, may be punctured with impunity, and often with great advantage; of the benefit of which operation I could quote many examples. If such amount of inflammation be excited in a diseased bursa as will produce suppurative action, an abscess will form which may be brought to a crisis if necessary by puncture: but in soft or fluid bursæ this crisis is not requisite.

The effect of a thread passed through the sac is similar to that of the same agent in the case of hydrocele or ranula, viz., the secretion is absorbed without being discharged by a wound, and the cavity is obliterated. But in the hard and consolidated form of the disease the effect of the thread is that of producing suppuration. The hard mass, as it were, breaks down into a common abscess, which, when punctured, discharges its contents, and heals. In this manner I have treated diseased bursæ for many years with success. A common thread of silk should be passed through the centre of the tumor, especially so in the hard form, in order to insure its including the central cavity, for this I believe to be necessary. The time it should be allowed to remain will depend entirely on the effect produced. Occasionally the tumor shows great indifference to its presence; at other times, and in other persons, smart inflammation follows, accompanied with considerable pain, in the course of a day or two. The inflammation may extend over the front of the joint. The thread should then be removed, and the knee fomented or poulticed; and from that period the disease may date its onward march towards a final cure. Nothing can be more satisfactory than the steady progress these cases generally make. When the bursa is large and hard the thread should remain until a good deal of inflammation is pro-

duced, even though suppuration be established, which will be indicated by the oozing of pus from the punctures. The thread being then removed, either the abscess will become more matured, and demand relief from the lancet, or the whole mass of the disease now become fluid, will undergo gradual absorption. I have cured many cases in the early stage in three weeks, but they more frequently require a month or five weeks, particularly when the absorption of a large mass of lymph forms a necessary part of the process of cure.

When the morbid bursa is situated too deeply to allow of the application of the thread, the means I have resorted to have been injection and pressure. Such a locality is the tendinous insertion of the semi-membranosus muscle, underneath which a bursa is invariably found. This bursa is obnoxious to chronic enlargement, but unattended with thickening. The pressure of the tendon in the extended position of the leg, by forcing it outwards, gives it a more or less elongated form, and it is moreover coupled with this other peculiarity, that unless very large, it disappears when the leg is in the flexed position; but when extended the bursa is carried outwards in the form of a hard round tumor, occupying the inner side of the ham, the hardness increasing in proportion to the tightness of the tendon upon it. In this situation the bursa sometimes attains a large size. It is inconvenient, but is not attended with the evils accompanying the bursa of the patella, although I believe all bursæ and ganglions about joints are a source of weakness. I have punctured, pressed, and injected this bursa with more or less benefit. One rather remarkable case occurred in the person of a young woman, who was aged about 30, and was exceedingly fat. In her person the bursa in question had reached a considerable magnitude, but did not appear so large as it afterwards proved, in consequence of the unusual dimensions of her limb. I punctured it with a trocar, and drew off eighteen ounces of aqueous fluid. It filled again and was re-punctured many times, with this advantage, that it diminished gradually in size till it contained about six ounces only. I then injected it with a weak solution of sulphate of zinc, which further controlled the secretion till the disease ceased to be a source of annoyance to her. I do not think the sac was even then entirely obliterated, and I presume that ere long she will again require the assistance of a surgeon.

Connected with the subject of bursæ is that of ganglions, or adventitious cutaneous cysts, which form on the tendons about the wrist or foot. A puncture with the point of a small lancet is a less painful and more certain remedy than a blow. The puncture may be sufficiently large only to allow the contents to be pressed through. A pad of lint, bound down with adhesive plaster firmly applied, will almost invariably destroy the cavity in twenty-four hours. A case occurred in the early part of the summer which may serve to remind us that even these cutaneous cysts will not bear rough treatment.

The cyst, which was rather unusually large, occupied the back of the wrist in a boy of eighteen. I punctured it several times, but it returned. I then passed through it a very fine thread. I was unfortunately absent from the hospital on the day of his next visit, and the thread remained for a few days beyond the usual period. Inflammation followed of a severe kind, and the boy became an inmate of the hospital for some weeks, where, having recovered from the attack of inflammation, he returned to the out-patient room with his original malady. *Med. Gaz., Aug.* 28, 1846, *p.* 366.

[At the meeting of the Dublin Pathological Society, May 18th, 1846, Dr. Adams presented casts and specimens to illustrate the pathology and surgical treatment of chronic enlargement of bursæ of the patella. His observations were confined to those enlargements which are accompanied with pain, &c., as distinct from their size. He briefly noticed the methods which had hitherto been practised, viz., by puncture; by subcutaneous incision; by injection; by seton; by extirpation; and by free incision; and

in order to lay before the society his own plan of treatment, he related the case of a female who was admitted into Richmond Hospital, March 14th, 1845, having such an enlargement over the right patella, and was so much inconvenienced by it, as to be anxious to be relieved by any means deemed advisable. The tumor was the size of a hen's egg; had a natural appearance; fluctuation was evident, and small foreign bodies could be distinguished in the fluid.]

On the second day after her admission, Dr. Adams opened the tumor by a free longitudinal incision, extending from above downwards, throughout the whole extent of the enlarged bursa. A fluid of an oily appearance escaped, carrying with it numerous small pippin-shaped bodies of a whitish colour. The interior of the cyst was now inspected, and some few small bodies were found inherent by slender pedicles to the interior of the cyst: these were detached from the lining membrane of the bursa and removed; an oiled dossil of lint introduced into the bursa; light compresses and bandage applied. On the eighth day suppuration was established and a poultice applied. No inflammation nor constitutional disturbance whatever were excited. Granulations were thrown out from the bottom of the cyst, and the cysts gradually became obliterated. On the 20th day, these (the granulations) were so much raised to the level of the skin, as to demand the application of nitrate of silver. She was discharged on the 10th of April; that is, the twenty-fifth day from that of the incision having been made, and for the last ten days she has been walking about without feeling any inconvenience.

The next case he had to adduce, was that of Mary Moran, aged 28, a house-maid. She had a chronic tumor situated over the right patella, which was as large as an orange. She applied to Dr. Power, who gave her his opinion, that if she wished for a radical cure, she should go into hospital, and submit to an operation, which would confine her for at least a month; but as she was unwilling to do this, he tried a palliative plan of treatment, by puncturing the swelling, and letting off a great deal of its fluid contents. These apertures were not followed by any inflammation, but having proved of but little advantage, he advised her to come into hospital, which she did on the 19th February.

Mr. Adams made a free longitudinal incision from above downward into the tumor, and gave exit to about three ounces of a brown oily fluid, in which were seen floating shreds of lymph, and small bodies like boiled rice. The cyst seemed about three or four lines in thickness, and its interior surface was remarkably smooth and yellow, like the interior of the aorta.—Towards the back part of the cyst, where it covered the patella, were seen large, round, transverse bands of yellow tissue; one of these bands was an inch long, of a cylindrical shape, and fully as large as the largest goose quill. Mr. A. then exhibited this portion of yellow tissue; he thought it advisable to remove it from the cyst, to which he found it adherent by its extremities, while the rest of its surface, like some of the carnæ columnæ in the heart, was free all round. Besides these transverse fibrous bands, there were also rounded cartilaginous bodies, as large as peas, attached to the interior of the cyst by pedicles; these were cut out with their pedicles, and are here shown. As in this case the cyst had anteriorly attained such an extent, its contents were fully evacuated, it formed a loose bag in front of the patella, which we could scarcely hope that it would contract so much as to prevent deformity. Dr. A. thought it right to dissect the skin from the eliptical portion of the cyst constituting its anterior portion, and to remove this eliptical portion of the cyst. This was accordingly done, and the foreign bodies having been removed, the wound was dressed as in the former case, but the time it took to heal was longer, and the suppuration was, of course, more extensive; but there was no constitutional disturbance whatsoever followed the operation. She left the hospital on 29th March, perfectly well; and it was truly surprising how much the thick cyst softened

down, and what little projection (beyond what is natural of the skin) remained. A cast of the knee, taken by Mr. Greene the day she was discharged from the hospital, shows what little deficiency is observable; a line of cicatrix, about two lines broad, and two inches long, from above downwards in front of the patella, alone remains.

Excision of the bursa, which is situated over the patella, when in a state of chronic enlargement, has been recommended on high authority as the best mode of proceeding. Dr. A. has known this to have been very frequently done; and although he might admit that there may be some cases in which such an operation might be judicious, still he must express his belief that such cases should form the exception, and that, as a general rule, the operation by a free incision is by much the preferable mode. He has observed the dissecting out of the bursa to be a very painful proceeding, and in very large tumours can well conceive, if not conducted with caution, the knee-joint might be endangered. For example, let us suppose a case such as this cast represents—the enlarged bursa measuring in its circumfrence 13 inches, projecting from the patella seven inches, and consequently, completely covering the patella above, below, and laterally. Dr. A. remarked, that, while a free incision from above downwards would be done in a few seconds, with but little pain to the patient, and without any immediate danger of injuring any of the subjacent parts, excision of such a tumor would be a most severe operation, and it is quite possible that the synovial membrane of the knee-joint might be opened, if the greatest caution were not used; whereas the free incision from above downwards, is quickly and easily done by any one, infinitely less painful, and in those cases Mr. Adams had lately under his care, quite satisfactory—the deformity which might be supposed to remain after the operation of incision, from the thickened cyst which remains, being found by experience to be really nothing. Dr. A. prefers the operation of free longitudinal incision to punctures, injection, or seton; because although these last means may excite sufficient inflammation, so as to produce a radical cure, they are by no means so certain; and Dr. A. thinks that any operation which leaves foreign bodies behind, is likely to fail in radically curing the disease, because when these foreign bodies are pressed upon when the patient is kneeling, new irritation and inflammation arise, with a consequent recurrence of the disease.

Another great advantage of the free incision, arises from this, that there is no constitutional disturbance following the operation. Punctures and setons, and sub-cutaneous incisions may be also followed by inflammation and suppuration of the cyst of the diseased bursa, and be accompanied by a decomposition of the fluid contents of the sac. The pus in these cases becomes remarkably fœtid, and much disturbance is produced in the system, which is not relieved until the fœtid pus and gaseous contents of the inflamed bursa are evacuated freely.

All these evils are prevented by the operation recommended by Dr. Adams, of free incision from above downward. True it is that, in cases where the cyst is thick and capacious, as it was in the case of Moore, lately under his care in the Richmond Hospital, something more than a simple longitudinal incision may be found necessary, as in such cases the emptied cyst may be loose, and force a way in front of the patella. In such cases all the surgeon has to do, is to remove an eliptical portion of the cyst—having previously dissected the skin from the cyst anteriorly; such an opening will allow us to see to the bottom of the cavity, and to remove with facility any foreign bodies or bands which may traverse the tumour, and which, if left behind, are calculated to cause a recurrence of the disease. In many cases the cysts are found much thicker than they were in any of the cases Dr. A. has met with; but Dr. A. is strongly inclined to believe that in all cases the cyst will be absorbed if the plan of free incision and subsequent mode of dressing here recommended be adopted.

*Dublin Hospital Gaz., May* 1, 1846, *p.* 280.

[Mr. J. Richard, of Leamington, recommends passing a bit of sewing silk through the centre of the bursa, and letting it remain three days. If the inflammation has been much he enjoins rest, applies a few leeches and the liq. plumbi lotion previously to introducing the silk.]

*Dublin Med. Press, Oct.* 7, 1846, *p.* 280.

REPRODUCTION OF DISEASED BURSÆ.

There is a bursa between the patella and the skin, and this, in housemaids, sometimes becomes diseased, and converted into a hard lump or tumour. I have frequently removed such a tumour from the knee of a housemaid, and sometime afterward, on examining the limb, I was satisfied that the bursa had been regenerated. Nor is this a mere supposition; I have positive proof that the fact is as I have stated it. There was a woman in the hospital from whose knee the late Mr. Rose removed an enlarged bursa. A year or two afterward she returned, and came under my care; and not only had the bursa been regenerated, but the new one had become diseased like the old one, and I had to repeat the operation which Mr. Rose had performed formerly. She had gone back to her former occupation, which included a good deal of kneeling, and under the influence of pressure, the new bursa had become converted into the same diseased structure as the old one.—*Sir B. Brodie's Lectures on Pathology and Surgery.*

*Med. Gaz., May* 8, 1846, *p.* 829.

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## AMPUTATIONS.

91.—AMPUTATION OF THE THIGH.—By JAMES SYME, Esq., Professor of Clinical Surgery in the University of Edinburgh.

[Mr. Syme says,]

Notwithstanding the share I took in introducing the flap operation, and the confident persuasion of its superiority formerly entertained, I have long felt occasion to point out some serious inconveniences apt to attend its performance; and I am now satisfied that there are circumstances in which the circular incision ought to be preferred.

In favour of the flap operation, it is contended—1. That the process, from its facility and rapidity of execution, must be less painful to the patient than the circular incision; and also renders it unnecessary to use a tourniquet, as manual compression in the groin may be effectually employed during the short space of time required for its performance, so that the limb may be removed at any part of its extent, and without the inconvenience alleged to result from the pressure of a tourniquet, in regard to ligature of the vessels. 2. That the soft parts may be readily fashioned, so as to afford an ample covering of muscle and integument of the bone. And 3. That the different textures of the stump, being allowed to preserve their natural connections, are more capable of sound union, than when detached from each other by dissection and retraction. In objection to this method it is said—1. That the rapidity of execution is apt to prove hurtful in subjects of defective strength, by producing a shock similar to that of a gun-shot wound. 2. That the vessels, being cut obliquely, are secured with difficulty. 3. That the wound is of greater extent than the surface resulting from circular incision. And, 4. That though the flaps afford an ample covering for the bone in the first instance, the contraction of their muscular substance gradually withdraws them from it, during the process of healing, so that there is ultimately nothing more than the skin, and frequently not even this, to protect the osseous surface. The grounds upon which the circular operation is maintained, are—1. The greater facility which it affords to liga-

ture of the vessels. 2. The smaller size of wound resulting from it. And 3. The more permanent covering which it affords the bone.

In subjecting these various arguments, on both sides of the question, to the test of experience, it may be remarked, that they are not all of equal value; some of them relating to matter of mere convenience, while others regard consequences of the most serious nature. The great questions at issue are, Which operation least endangers the patient's life? and, Which affords the most comfortable stump? Now, every one who has witnessed the flap operation extensively and indiscriminately for amputation of the thigh, must have seen a large proportion of deaths, and in the event of recovery, not unfrequently a condition of the stump no less unsightly than inconvenient. Such are the undeniable facts, and their explanation presents little difficulty to any one who has had sufficient opportunity of observation.

So far as the mere performance, or early consequences of the flap operation are concerned, nothing can be more satisfactory. The incisions are executed almost instantaneously, and the whole process is completed with a degree of facility, dispatch and ease to the patient, that presents a remarkable contrast, when compared with the delay and suffering, from complexity of procedure, necessarily attendant upon the circular method.

When the flaps are placed together, it seems as if nothing could prevent their perfect union, so as to effect a speedy cure, and afford a comfortable covering to the bone. In some cases these favourable anticipations are fully realized; but though a good many days, and even one or two weeks, may elapse without making manifest the disappointment to be experienced, it much more frequently happens that the soft parts, however ample they may have appeared in the first instance, gradually contract and diminish, until care is required to keep their edges in apposition over the bone, which sometimes, notwithstanding every precaution, at length becomes denuded, and presenting itself to view, whether dead or living, proclaims the unavoidable misery of a sugar-loaf stump. This distressing result depends upon the vital contractility of the muscular tissue, which continuing in operation so long as the cut surface is not prevented from yielding, by the formation of new adhesion, not only lessens the mass of flesh provided for covering the bone, but gradually retracts it together with the superjacent integuments. The effect thus produced is favored by the following circumstance. In the first place, by cutting the flaps of such moderate length, that when brought together, they merely meet without straining; secondly, by sawing the bone where it is exposed by simply separating the flaps, instead of drawing the muscles back so as to divide it at a considerably higher point; and thirdly, by performing the operation at the lower third of the thigh. Mr. Liston recommends amputating at the middle of the bone, upon the ground of thus forming a more convenient stump for the attachment of an artificial limb, than would result from operating at a lower joint. For my own part, I have, during many years past, advised this to prevent the great risk or almost certainty of protrusion to which the bone is exposed when divided at or near its lower third. But the flap operation being thus objectionable below the middle of the thigh, and even higher up, seldom in the end furnishing more than a covering of skin to the bone, it may be inquired, how far the circular method deserves adoption in amputation at the lower third?

The true object of the circular incision is to provide a covering of skin for the bone; and a great error has been committed by many, indeed almost all the would-be improvers of this operation, in directing their attention to modifying the division of the muscles, as if any form of their section could materially influence the result. All the attempts with this view have been directed so as in one way or other to give the cut surface of the muscles a conical form, evidently under the impression that they serve to assist in covering the bone. Now, it is quite clear, that if the am-

ple masses of flesh afforded by the flap operation yield to the retractile agency of their tissue, the scanty portion obtained by any form of circular incision cannot have the slightest effect in improving the condition of the stump. These wrong directed efforts would have done no harm unless they had withdrawn attention from what was really required to render the result satisfactory. In this way, however, they have seriously opposed improvement, and in my own case, I confess, long prevented the truth from being distinctly seen.

The perfect condition of stump resulting from amputation at the ankle, where there is nothing but integument to protect the bone, led me to conclude, that if the circular operation could be performed with the certainty of providing such a covering, it might be employed with advantage in the lower third of the thigh; which being the thinnest part of the limb, most readily admits of forming a stump composed merely of skin. There is also, in operating here, plenty of room to apply the tourniquet without impeding the incisions or retraction of the muscles, and the size of the wound inflicted is, of course, much smaller than that of an amputation at the middle of the thigh. In the course of this summer I have performed the operation four times, on adult patients, with the effect of confirming the favourable expectations which the considerations just mentioned had led me to entertain; and I now feel warranted to advise, that whenever a case requiring amputation of the thigh admits of the limb being removed at its lower third, the circular method should be employed.

The compress of the tourniquet should be applied over the artery close to the groin. Instead of the old-fashioned concave edged, thick-backed amputating knife, a middle-sized one of the kind employed for the flap operation, will be found more convenient. The incision of the skin should be made as near the knee as possible, not in a circular direction, but so as to form two semi-lunar edges, which may meet together in a line from side to side, without projecting at the corners. The fascia should be divided along with the integuments, which are thus more easily retracted—not by dissecting and turning them back, but by steadily drawing them upwards, through means of the assistant's hands firmly clasping the limb. This should be done to the extent of at least two inches, or more, if the thigh is unusually thick. The muscles are then to be divided as high as they have been exposed, by a circular sweep of the knife, directly down to the bone, from which they must be separated and retracted with the utmost care. In ordinary circumstances, the retraction should not be less than two inches, and, before using the saw, the bone must be completely exposed by means of a cloth split up the middle, applied on each side of it, and forcibly held up.

If due attention be paid to these directions, I feel confident that amputation by circular incision at the lower third of the thigh will afford satisfactory results, and should therefore be preferred to the flap operation, at a higher part of the limb, when the circumstances afford room for choice. Where it is necessary to amputate at or above the middle of the bone, there can be no question as to the propriety of operating by the flap method.

Before arriving at the conclusion which has just been explained, I thought that amputation at the knee might be employed with advantage, as a substitute for the flap operation, at the middle of the thigh; and my own opinion would still be so, if this alternative afforded the only room for choice. I operated at the knee with complete success in three cases, two of which were diseases of the joint; and the other a recent injury from the leg having been torn off by machinery. But as the soft parts required to form the stump in this situation, are apt to be so deranged in their texture, as to delay, though not prevent recovery; and thus, in some measure, counterbalance the advantage of exposing cancellated instead of dense bone, together with the contents of its medullary cavity, I do not persist in advocating amputation at the knee, now when satisfied that the operation by

circular incision, if performed with due care, on proper principles, may be employed at the lower third of the thigh, safely and advantageously.

*Monthly Jour. of Med. Science, Nov.*, 1846, *p.* 221.

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92.—MR. QUAIN'S METHOD OF AMPUTATION.

Mr. Quain has, for a considerable time, been in the habit of making the flaps short in the first instance, and adding to their length by circular incisions through the deeper muscles. This plan, Mr. Quain stated, has the advantage of removing one of the objections to the flap operation—namely, that in primary amputations performed on this method, when the subjects are robust, and the muscles largely developed, the mass of flap is unnecessarily and inconveniently large. It is on this account that many surgeons prefer the circular form of incision. He expressed the belief that, on this ground, in places where primary amputations are frequent (as in manufacturing and mining districts) the circular operation was likely to be found most suitable; and, on the contrary, where accidents are of unfrequent occurrence, and amputations are resorted to in consequence of disease of some continuance (as, for instance, disease of bone, or of joint), the flap operation is not unlikely to be in favor among surgeons. He (Mr. Quain), always made flaps in the first incisions, and then divided the deeper parts by circular incisions, thus, at the same time, removing a part of the deeper muscles, and providing a more efficient covering for the bone. The plan undergoes some modifications, adapting it to different parts of the limbs. Modifications are necessary, in consequence of the very different manner in which certain parts are clothed with muscle—e. g., the leg and the forearm. *Lancet, May* 30, 1846, *p.* 593.

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93.—AMPUTATION.—By F. A. Bulley, Esq.

At a meeting of the Reading Pathological Society, Mr. Bulley, read a short paper on some of the disadvantages which he considered to attend the flap operation for amputation. He thought it was a much more painful operation than the circular one, and that in the aggregate, it took a longer time in its performance. More painful, from the greater extent of the integument divided, and from the oblique incision of the nerves; and longer in performance from the oblique section of the vessels, rendering them unable to collapse, and thus, with a greater difficulty in securing them, a greater number of arteries required ligature. An eminent surgeon in London had mentioned to him, that he had been obliged to apply twenty-five ligatures after a flap operation, in which there was reason to believe, that had the circular method been employed, three or four might have been sufficient.

Mr. B. thought this necessity had arisen from the oblique section of the smaller arteries preventing their collapsing in contra-distinction to their retracting, which he believed was not the cause of the hæmorrhage stopping after amputation. He believed that arteries under a certain size were, from the absence of a muscular tunic placed under the same circumstances as veins, and were equally capable of collapsing when transversely divided. What was generally thought to be retraction, he believed was nothing more than the severed muscular fibres round the collapsed vessels contracting, and covering, and thus obscuring their ends. If the power of retraction resided in the arteries, *per se*, by reason of their muscular construction, why did not the large arteries, which were composed of a distinctly muscular coat, retract for the stoppage of hæmorrhage, as well as small ones, in which latter a muscular envelopment was scarcely discernible. The larger

arteries needed a ligature he thought, simply because the density of their muscular tunic prevented their collapsing, which was not the case with the smaller ones, which were only prevented from doing so in the flap operation, by the oblique method of division to which they were subjected. In the original paper he had introduced a hypothetical argument to account for the secondary venous hæmorrhage which sometimes ensued after flap amputation, but would not recur to it now, as he was anxious not to take up the time of the Society without a definite practical object.

Dr. Bradshaw had seen an operation performed at the Westminster Hospital, by one of the surgeons, when the flap section was used, and more time and blood was lost than by a circular operation, and secondary hæmorrhage followed, and it was the opinion of all present that the flap operation was, generally speaking, not preferable to the circular one.

Mr. May said that he thought the observations of your reporter, as regards hæmorrhage, not very just, but that he believed we were not in a condition, from the statistics of surgery, to come to a conclusion on the subject. The pain he did not consider a matter of much importance. The section of the vessels, in turning back the skin in the circular mode, was objectionable, as dividing the nutrient vessels on which union depends, which he believed to be both practically and theoretically injurious.

*Prov. Med. and Surg. Journal, Sept.* 23, 1846, *p.* 450.

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94.—EFFECT OF THE GENERAL HEALTH ON THE RESULT OF OPERATIONS.

[Mr. Ormerod, in his "Clinical Collections and Observations on Surgery," says:]

The three chief affections destroying patients after operations and injuries—namely, the general habit produced by drinking; secondly, organic disease of the lungs and kidneys, especially emphysema in the former, and granular disease in the latter; and, thirdly, tubercle—act very differently, and at different periods. During the early period, and often for weeks after operations, patients labouring under tubercular disease do well; and it is often only at the absolute return to health, rather than during the recovery of the patient from the disease itself, that the effects of tubercle begin to show themselves. Organic disease produced by drunkenness, and habitual drunkenness, act differently; the organic disease presses heavily at every period, and may destroy life early or late; but the mere habits of the drunkard show themselves chiefly at a very early period. The patient who nearly sinks from his unsound organs within the first few days, often lags on for weeks and months in danger; but the man who has simple delirium tremens is taken ill directly, and often dies; but if he recover from his delirium, he generally gets well from the operation, and sometimes quickly.

*Lancet, Oct.* 17, 1846, *p.* 430.

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## ORGANS OF CIRCULATION.

95.—APPLICATION OF LIGATURES TO ARTERIES.—By G. J. Guthrie, Esq., F. R. S.

[After an admirable set of practical lectures delivered by Mr. Guthrie, at the Westminster Hospital, on this subject, he gives us the following conclusions, as being a bird's eye view of his extensive experience on one of the most important subjects connected with surgery.]

1. The Hunterian operation for the cure of an aneurism, is not applicable to the treatment of a wounded artery, inasmuch as the wound of the artery communicates with the external parts, and nothing intervenes to prevent blood flowing from the wound in its side, or from its cut extremities.

2. When a large artery is divided and bleeds, the wound should be enlarged if necessary, and a ligature placed on both the divided ends; but if the artery be only injured and not quite divided, the ligatures should be applied, one immediately above, the other below the injured part. The artery may or may not then be cut across, at the pleasure of the operator, but the limb or part should be placed in a relaxed position. A bandage should not be applied, and the edges of the wound should be simply brought together by adhesive plasters, which do not extend completely round the limb.

3. No operation is to be performed on any artery unless it bleeds at the moment of its performance, inasmuch as hæmorrage once suppressed may never return.

4. The intervention of muscular fibres, or of whole muscles, is not a sufficient reason for tying the artery at a distant part. They must be divided, if it be possible, to the extent required for a due exposure of the injured artery and its accompanying veins and nerves.

5. If the wound pass indirectly to the principal artery, from the back of the thigh for instance to the femoral artery in front, or from the outside of the arm to the humeral artery on the inside, the surgeon may (on satisfying himself of the part likely to be injured, by the introduction of a probe) cut down on the vessel opposite that supposed to be wounded, by the most simple and approved method. When the artery is exposed, the probe will point out the spot at which the vessel has in all probability been wounded. Pressure made below this spot on the artery, will cause it to be distended and to bleed, if the flow of blood be not prevented from above; the artery is then to be secured by two ligatures, and the lower one should if possible be applied first.

6. The tourniquet should never be applied in an operation for aneurism or for a wounded artery. Compression by the hand in the course of the wounded vessel is allowable.

7. The blood from the upper end of a divided artery, or that nearer the heart, is of a scarlet arterial colour.

10. The blood from the lower end of a divided artery, or that which is further from the heart, is of a dark or venous colour, when it happens to flow immediately after the division of the vessel. At a subsequent period it may assume more of the colour of arterial blood, but it rarely does so for several days after the receipt of the injury, and always flows, or at least until a very late period, in a continued stream.

11. This regurgitation or flow of blood from the lower end of a divided artery is a favourable sign, inasmuch as it shows that the collateral circulation will probably be sufficient to maintain the life of the extremity.

12. The collateral circulation is in almost every instance capable of maintaining the life of the upper extremity when the axillary artery is divided, and the colour of the blood which flows from the end of the artery, on its being divided, is not always as dark as in the lower extremity, and it sooner resumes its arterial colour.

13. The collateral circulation is not always capable of maintaining the life of the limb when the femoral artery is injured. The best assistance which art can give is to rub the foot and leg in the gentlest manner, between the hands of one or two strong young women, for several hours, or even for the first three or four days: relaxing this process very little, even during sleep. When the vein is divided at the same time, or rendered impervious, the limb usually mortifies.

14. The collateral circulation is sufficient to maintain the life of an extremity in almost every case in which an aneurism has existed for eight or ten weeks, although it may be incapable of doing this if the principal artery have been suddenly divided, without any previous disease having existed in the part.

15. The theory and the operation for aneurism are never to be applied to the treatment of a wounded artery, which has caused a diffused or cir-

cumscribed aneurism, whilst the external wound communicates with the artery, unless it be impossible or impracticable to tie the bleeding vessel.

16. When an artery has been wounded, and the external opening has healed for weeks or months, so as to give rise to a diffused or circumscribed aneurism, it may be treated according to the theory of aneurism occurring from an internal cause, if the case will permit it without danger, although with this difference, that as the artery is sound the operation may be performed close to the tumor. If any doubt exist as to the capability of the collateral circulation to support the life of the lower extremity, when the external iliac is secured by ligature, the operation should be performed at the injured part by opening the swelling and enlarging the wound, as in the case of a wounded artery.

17. When a circumscribed or diffused aneurism which has formed after a wound has been opened, whether by accident or design, it is placed in the situation of a wounded artery, and should be treated as such. If the aneurism has arisen from disease of the vessel, and the wound or opening into it cannot be permanently closed, the limb is in a worse state than if the artery had been wounded by accident; because a ligature or ligatures placed on a diseased artery are little likely to be successful. They are liable to all the difficulties and inconveniences attendant on the old operation for aneurism. If a case of the kind should occur in a popliteal or femoral aneurism, situated at or below where the artery passes between the triceps and the bone, amputation, if it can be done low down, will be the best remedy. If the aneurism should have formed higher up, and the opening can be closed with any prospect of its healing, a ligature may be placed upon the artery above it; but on the recurrence of hæmorrhage, which cannot be restrained by moderate pressure, the artery must be tied below, or recourse had to amputation. It is, however, to be observed, that amputation under these circumstances, when resorted to as a third operation, rarely succeeds.

18. When an artery is wounded with a simple fracture of a bone, or with a comminuted fracture of the smaller bones, with an external communicating opening, both ends of the artery should be secured, and the limb treated in the usual manner.

19. When the bone broken is the femur, and the artery divided is the femoral artery, the operation of amputation will generally be advisable. It will always be so if the fracture is a comminuted one, or the shaft of the bone is extensively split.

20. When the broken bone injures the artery and gives rise to an aneurism, the treatment is to be first of the fracture and then of the aneurism, as soon as circumstances render it advisable or necessary to have recourse to the operation for aneurism, and which can only be after time has been given for the collateral branches to enlarge, so as to maintain the life of the limb.

21. When mortification takes place in addition to, or as a consequence of, a wounded artery, amputation should be had recourse to forthwith.

22. The place of operation should be in almost all cases at the seat of the original wound; but there may be an exception, viz.—

23. When the injury has been a mere cut, just sufficient to divide the artery and vein immediately below Poupart's ligament, and mortification of the foot supervenes, amputation should be performed below the knee, or at the part where the mortification more usually stops for a time.

This rule is founded on the observation, that great efforts are made by nature to arrest mortification a little below the knee. Sometimes they succeed; when they fail, death is almost inevitable. The advice to amputate at this part is founded on the fact of its being infinitely less dangerous, when done there, than on the thigh, independently of saving a joint.

24. When mortification has continued for several days, and is spreading without having once stopped, the constitution of the patient being implicated as marked by fever, amputation should not be performed until the

mortification has been arrested and the line of separation has been well formed. In many cases, where there is great weakness or irritability of constitution, it will be advisable to defer the operation to a later period, particularly if there be hope of the patient's becoming stronger and more tranquil.

25. If the mortification has once stopped and then begins again to spread, it will never again cease to extend, and amputation may give some chance of life.

26. Amputation of the arm should never be had recourse to, in consequence of a wound of the axillary artery, unless mortification takes place.

27. When mortification takes place after operation for aneurism, the surgeon must be guided by the state of the patient's constitution, in resorting to or refraining from amputation.

28. When hæmorrhage takes place from the surface of a stump, the artery should be tied at the part from which the blood comes in the first instance, if it can be easily done. If this should not suffice the artery must be tied higher up, just at such distance as to afford a fair hope of its not having been affected by the derangement of the stump, which has led to the failure of consolidation in the extremity of the artery, and yet not too high to admit of the junction of any large collateral branches. If the bleeding proceeds from several small vessels, and cannot be arrested, the principal trunk should be tied above the diseased part, and the patient removed to a purer atmosphere, without which the operation rarely succeeds in any case.

29. When an aneurismal tumor mortifies, it is unnecessary and improper to tie the artery above the tumor, because it will be obliterated if the mortification be arrested by the efforts of nature, which the operation may interfere with, and even prevent, whilst, if the mortification spreads, it will be a matter of supererogation, and only hasten the patient's dissolution. When an aneurism inflames, is opened by ulceration, and bleeds profusely, it is a proper case for amputation, if such an operation can be performed.

*Med. Times, July* 4, 1846, *p.* 266.

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96.—THE HUNTERIAN METHOD OF TYING ARTERIES.—By T. W. King, Esq.

[Mr. Wilkinson King shows that the Hunterian method of tying vessels was not really by cutting ligatures, as are now generally used, and that the operations were not the less successful. He brings numerous cases forward on this interesting subject:]

Mr. Hunter observed, "that in dogs, the mere exposure of the tibial artery to the air for about an hour, excited such a degree of inflammation and thickening of its coats, as completely to obstruct its canal." Mr. Frere gives a very pretty drawing of the tibial of a horse, thickened and narrowed by recent active inflammation, in consequence of pressure used experimentally. We see inflammations, granulations, and contractions, closing up wounded arteries of limited size, and shutting up the vessels in vomical cavities. A certain hipernutrient action, or a subsequent contraction, may, in spite of aortic distension, close up the orifice of the coronary artery, the carotid or intercostals, and narrow the aorta itself as well as its main branches. It has a similar effect when the tissues of organs become condensed almost to the exclusion of blood, and it is a momentous reflection that very little more than granulations about an artery may contract to the blocking up of the channel.

In Mr. Hunter's third attempt to secure the femoral artery for popliteal aneurism in a man aged 35, a single ligature (including also the vein), was applied, "so slightly as only to compress the sides of the artery together, sufficiently tight to prevent the pulse in the sac without injuring the coats of the vessel." The separation took place on the 14th day, and on the 28th the patient seemed well. The sac suppurated, and the cure was complete

by the 12th week. In his fourth case the vein was excluded; the thread separated on the 29th day. Suppuration and ague delayed the cure for three months. The fifth patient was a man aged 42; the ligature came off on the 11th day; he was well by the fifth week. Mr. Lynn's patient was aged 25; a broad ligature was tied so as to cut off all communication with the tumor in the ham; it came off on the 13th day, and he was well in a month. Mr. J. Earle, on a man aged 50, employed a simple ligature, which separated on the 15th day with the best success.

Sir. E. Home's second or supplementary paper contains similar cases. He operated on a man aged 32; the thread came off on the 11th day, and the cure was complete in five weeks; and on a man aged 36, the separation was on the 12th day, and on the 28th he was well. Sir E. put a ligature on the femoral of a man, aged 33; it came off well on the 12th day. On the 32d the same was done to the opposite vessel, which after 13 days gave rise to repeated bleedings. These were finally subdued by pressure, &c. Mr. Knight tied the vessel for a man aged 35. There was a slight hœmorrhage from the wound on the 23d day; the separation was on the 31st, and the cure speedy. All these ten successes I must connect with the gentler ligatures, although I may be wrong. It seems quite certain that they long preceded the old discovery, of what happens on tying an artery with force enough to cause that sudden giving way of almost every thing, which is felt almost unpleasantly even post-mortem.

Early in the 17th century, M. A. Severinus once tied the femoral with success. In 1688, we learn that Bottentuit succeeded with a simple ligature; and before 1772, Guttani exposed the inguinal, and with graduated compress or roller closed it speedily. All this I attach to loose ligatures rather than cutting ligatures; always remembering, however, that inflammation of the arterial tunic may casually aid the final contraction of the orifices, while the indispensable sealing of the divided vessel in the absence of such casual contraction, depends essentially on external fibrous tissue, as it were two little acorn cups united by their stalks, new growth fashioned by definite tractions and tensions. The products of diffused inflammation around may be useless or mischievous, but the shining threads or bands stretched over and between the two compressed ends of the artery (as they gradually recede from each other), close over the separating ligature, and are invaluable and alone indispensable. Violent inflammations may leave unequal consolidation and contractions even to obliteration of vessel for inches.

Scarpa's cases afford remarkable evidence in favor of slow ligatures, and even of late hæmorrhage. (See his Appendix.)

For a man, æt. 25, he cut open a femoral aneurism, and applied two moderate ligatures. There was bleeding on the 11th day, stayed by his reserve ligature with compression. The separation was on the 20th, and the cure good. (1794.) A man, æt. 33, had a sixfold thread put on the femoral with one of reserve. They came away on the 16th; after the 20th there were bleedings, but the case did well. (Morigi, 1796.) Scarpa's full plan was put in force on a man, æt. 42. Two six-fold ligatures, with compresses, were put on the femoral. They came away on the 18th. A little blood oozed from exertion, but the cure was speedy. (1800.) The same is related of a man of 46, except that there was no bleeding, and that after the 26th day, fatal sloughing supervened in the sac. (1799.) And again, the same as the last; but the casting was on the 21st, and abscess only retarded recovery. (1804.) One of his cases is harder to dispose of. The full treatment, if I may so speak, was applied near the profunda of a man, æt. 34. The separations seem to have been near upon the 8th day, and without any mischief. (1803.) What would the cutting ligatures have done?

His full plan was thrice employed with success on the brachial, the six ligatures separating, all between the 10th and 13th days. Latterly, Scarpa had again and again fair success by applying a loose ligature over plaster on the femoral artery only for four days. Just so likewise on the brachial

artery. Mr. P. Crampton applied a tape ½ of an inch wide, by means of a presse-artère on the superficial femoral, and the tightening was stayed just as the tumor ceased to beat. After two hours the tape was somewhat loosened, and at the end of 24 hours completely relaxed. In due time the aneurism seemed to be fairly stopped. Mr. Dease did the like operation, continuing the pressure for about 24 hours. The cure seemed complete in a month. (*M. Ch. Trans.* vol. vii, 369.)

Sir C. Bell left a thread quite loose around the artery of an animal; the vessel became filled with clot, showing that the coats inflamed. Sir. C. Bell (*Institutes of Surgery*) distinctly observes, "It is not necessary to draw the ligature so as to cut the inner coats of the artery, and it is not safe, unless in young and healthy subjects, and in amputations. You will observe that the important consideration is, the mode in which a ligature should be employed in old arteries subject to aneurism. It is very dangerous to apply the experience acquired in operating upon the healthy subject to the subject of aneurisms—far less is it safe to draw conclusions from experiments on brutes! Any mode of securing the artery will do in the young and healthy individual, and in amputation."

The latitude which Sir Charles gave his pupils, seeing he was almost singular in his doctrine, may seem natural; yet I must think it beyond the point of safety in any case. It would have been well to explain fairly what he deemed "folly." One modern declares for tight ligatures, even exaggerated with an adjective oath. Sir Philip Crampton certainly ranks with Sir C. Bell as an opponent of the over-daring followers of Jones.

It will be seen that I regard cure after hæmorrhage as a proof that the main sealing is external; and it will be understood that what I describe as the sole essential repair, is consistent with the least of what is called inflammation, and the scantiest material reformations. It is certain that the least diffused inflammation consistent with the injury done to a healthy body, is that on which we ought to reason when considering healthy repair: the more complicated case follows—thickening and contraction of vessel in the second place; inflammatory changes within, in the third place. I regard as quite insignificant, the common, narrow, conical clot, small and loose, except that its base, or nucleus, is attached to an inorganic effusion the size of a pin's head, where the vessel is gathered up to a mere point.

*Med. Gaz., May* 15, 1846, *p.* 855.

Home, or probably Hunter, makes a plain inference, "that simply taking off the force of the circulation from an aneurismal artery is sufficient to effect a cure of the disease, or at least to put a stop to its progress, and leave the parts in a state from which the actions of the animal economy are capable of restoring them to a natural one."—*London Medical Journal*, viii. 130, 1787.

The common theory, that the cure of aneurism depends on some previous quiescence of the blood facilitating coagulation, or that coagulation precedes the cure, is to me very problematical, and, I might add, apparently needless. We have, as I conclude, to a demonstration, a diminished impetus of the blood entering the sac, which is less dilated and more able to contract. We have also, all around it, increased impulses and nutritions. The balance of internal and external forces is altered. Distension is diminished, compressions prevail, and every step gained makes the remainder still more easy, and the return of distension more difficult.

The less coagulation in the repairing sac, the more rapid its contraction; it is, in truth, only the fluid that ever yields to pressure, transudation, or absorption; first, the live blood, and then partially the fluid in the clots. Thirteen years only induces a slight contraction of the laminated mass in a cured aneurism. It is ever brown fibrin. Of course it is not intended to apply this to diffused extravasations, whether coagulated or not. The aneurismal sac wastes as it shrinks, and almost without limits, unless some internal persistent solid arrests its decline by a measure of counter-tension.

Mr. Wardrop seemed to cure a fearful aneurism at the bottom of the neck in an old lady of 75, by ligature of the carotid above. The thread separated towards the fifth week. Dr. Bush did the operation for carotid aneurism on a female of 36, with success. The separation was on the nineteenth day. An aneurism of the innominata seemed to be cured in a man of 30,* by a ligature on the carotid, which hung on three months. These cases are all recorded by Mr. Wardrop (on Aneurism). Dr. Campbell's operation was like the last. The tumor at first subsided, but on the nineteenth day reappeared, with pneumonia, &c., fatally. The aorta was involved in the dilatations.—(Hay's Journal, July, 1845.) Mr. Wickham tied the carotid and subclavian for innominata aneurism. The man was 55, and wasted. The carotid ligature produced direct relief; it came off in fourteen days, and six or seven weeks later, dyspnœa, &c., led to the tying of the subclavian, with some fair alleviation. The silk came away on the twenty-second day, and the wound healed. Seven weeks from the last operation the sack burst outwardly, and the next day he died. The root of the innominata was pretty sound. Brasdor's plan was here perfected, but the tumor went on as an aortic aneurism.—(Med. Chir. Trans., vol. xxiii.)

Sir Edward Home tied the inguinal artery for aneurism of the external iliac, but without at all arresting the disease.—(Vide foot-note, Med. Gaz., vol. i., p. 88.) Dupuytren tied the axillary, but bleeding was fatal, as I have related, Med. Gaz., Jan., 1846, p. 596. Thus it appears the principle of Brasdor is of limited application, and there is some show of reason why different cases should succeed and fail. May we not suppose that an aneurism with two outlets shall, when one outlet is closed, have systolic reflux enough at its entry to lead to cure? *i. e.*, of course in particular cases. This kind of reflux may operate under other circumstances. Is not this the history of the epigastrics after birth, and of the artery on either side of a ligature in the absence of branches and of clots? (The clots obviate mere adhesion; their final organization is a baseless fancy.) The artery is found contracting and wasting almost to its very root or source.

Elastic tubes are always emptying themselves at one end and filling at the other, the cardiac dis-tension must decrease from the last point. In other words, a tide wave in elastic tubes would decrease in force as it flows, to exhaustion. May not frictions, tortuous canals, varying external pressures, add to this?

Mr. Hodgson and Sir A. Cooper record instances of the closure of the common carotid and subclavian by the pressure of aortic aneurisms, and Mr. Wardrop has very happily shown the dilatation of a primitive artery compressing a secondary trunk; and this, comparing the tensions in the two cavities, may be reasonable, but, as I have elsewhere hinted, it is a physical mistake to suppose that the dilating sac may compress the artery which supplies it. The arterial distension decreasing from the heart cannot be greater in the sac than in the tube from which it is filled, but is rather less. The increasing sac grows all ways as parts yield, but the artery is least of all capable of yielding to become compressed. The study of the natural effects of physical extensions and pressure, coarse or minute, is hardly yet begun; the pathology of the case is still more in the dark, yet nothing is so fundamental and essential in practice. Here is, in very truth, a principle of the profession. Though constantly adverting to the doctrine, I leave its systematic display to those who are expert at borrowing. What I here advance will find its corroboration in former papers.—(Vide Med. Gaz., May, 1845, &c.)

*Medical Gazette, May* 22, 1846, *p.* 901.

* Mr. Evans' case of Belper. Eight days from the operation the brachial became plugged; by arteritis (?)

[The following opinion of Chelius will be found in Mr. South's translation of the eminent surgeon's "System of Surgery," and, as it bears upon the preceding paper of Mr. W. King's, we subjoin it, although we venture to think the practice questionable:]

I do not believe it needful to draw the silk so exceedingly tight as commonly recommended, for the purpose, it is said, of cutting through the internal coat; it should be drawn so much that the whole of the internal coat be brought into close contact, and that the silk should indent the internal coat of the vessel: in other words, the ligature should be tied moderately tight. I do not believe that cutting through the internal coat is absolutely necessary for the safe application of the ligature. A thread applied around the carotid artery of a dog so loose as not to interfere with the passage of the blood, is sufficient to cause inflammation, which will block it up completely, as was proven by an experiment made by my able master, the younger Cline, and which I myself have repeated with the like result. In the museum of St. Thomas' Hospital there are two preparations, in which the femoral artery was tied with a broad tape, and (the tape) removed after some hours by the elder Cline, in cases of popliteal aneurism.

In one case, the artery being laid bare, a double tape, about an inch broad, and one piece lying on the other, was passed by means of an instrument behind the artery. The piece of tin which conducted the tape was cut off, and a cork, nearly an inch long, was laid upon the artery, and confined to its situation by means of the upper tape, producing, in this way, a sufficient pressure upon the vessel included between the ligature and cork, to stop the circulation, was left loose. The intention in securing the artery in this way was to compress the sides of the vessel together, and produce union without ulceration. On the ninth day the tapes were removed, and everything seemed to be going on very favourably, when the patient was attacked by a fever, supposed to have been caught from another patient in the same ward, of which he died on the seventeenth day after the operation. On examination of the limb after death it was found that ulceration had taken place through the whole extent of the artery included in the tape, and sinuses were formed both upward and downward in the course of the thigh to some distance. In the other case, similarly treated, the operation was successful, but the patient died, three months after, of diseased lungs. Both these preparations are in the museum of St. Thomas' Hospital.

Crampton (now Sir Philip) of Dublin, holding that the division of the internal and middle coats is precisely the kind of injury which a diseased artery is least able to bear with impunity; and that, "accordingly, secondary hæmorrhage, or even aneurism, is not an unfrequent consequence of this operation," adopted a modification of Cline's use of a temporary ligature. "The femoral artery was laid bare, at the usual place, by an incision not exceeding three inches in length, and a tape, one-eighth of an inch in breadth was passed under it by means of an aneurismal needle. The ends of the ligature were passed through the holes in the foot of the presse-artere, and then crossed through the hole in its stock. The artery was gently compressed by drawing the two ends of the ligature in an opposite direction, until the pulsation had ceased. The ligature was then secured by passing a small peg of wood through the hole in its stalk." Soon after the patient had excruciating pain in the calf of his leg, and this continuing, at the end of two hours Crampton "determined to relax the ligature, as well as to ascertain how far the pain was excited by its presence, as to observe what progress had been made in the process of coagulation; the peg was withdrawn from the hole in the stalk of the instrument, and the ligature was then left at liberty to yield to any impulse that it might receive from the artery. I watched for five minutes, with my hand upon the tumour, and, as the pulsation did not recur, the peg was replaced, so as to secure the ligature at a degree of tension it now possessed." After forty-four hours the ligature was completely relaxed; there was no pulsation in the

ham; and, on the following day, it was removed, and the patient cured. Dease, of Dublin, also performed the like operation, and loosened the ligature five hours after; but a minute after, "a deep and obscure pulsation was discerned in the tumour, which became more distinct every moment." The ligature was immediately tightened, and the pulsation ceased. Nineteen hours after, "the ligature was again completely loosened: we waited with great anxiety for nearly an hour, but the pulsation returned no more." The patient recovered. Crampton's instrument consists of a short cylinder, having a foot at the bottom, pierced on either side with a hole for the tape, which, having been passed through a transverse hole near the top of the cylinder, where they are crossed and tied, a little screw works down upon this tie, by which the ligature can be tightened.

The first of Mr. Cline's cases related above, proves that the compression of the artery, by means of a broad ligature, is no safeguard against ulceration of the vessel, and the pain suffered by Sir P. Crampton's patient indicated a circumstance which would, in a large proportion of cases, render an operation of this kind dangerous if not impracticable. The branches of the saphenous nerve are not frequently so intimately attached to the femoral artery as they probably were in this case; but we have known great pain occasioned at the moment of placing a ligature around the vessel; and the pressure of a broad fold of linen, or a presse-artere, must always tend to render the surrounding suppuration and inflammation far greater than would usually result from the presence of a small round ligature. And where important nerves lay in the close vicinity of the vessel, as in the case of the primitive carotid, innominata, and subclavian, the use of such an apparatus could not be contemplated for an instant.

*Med. Gaz., Oct.* 9, 1846, *p.* 631.

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97.—LIGATURE OF BOTH CAROTID ARTERIES FOR A REMARKABLE ERECTILE TUMOUR OF THE MOUTH, FACE, AND NECK.—By J. Mason Warren, M. D., one of the Surgeons of the Massachusetts General Hospital.

Albert Tabur, from Maine, 23 years old, consulted me on October 1st, 1845, for an enormous tumour of the lower lip and tongue, which had supervened on a mark occupying a good part of the face and neck, and now presented the following appearances:—The head of the patient was larger than common; the left side of the face was almost wholly occupied by a discolouration, which was originally less extensive and lighter coloured, but had now attained the extent and appearance above mentioned. The right side presented a discolouration about half the extent of the left. The lower lip was much enlarged, everted, and gave three aspects: externally, the thick tumefied lip: internally, a fungoid tumour, covered by red granulations, distended by blood, as if ready to break through; the whole surmounted by an irregular ulceration with thickened edges and a hardened base. The red granular appearance extended underneath the tongue, through the ranular space to the inferior surface itself, the left half of which was enlarged to double the natural size, and partially protruded between the teeth: its upper part being the seat of five or six small ulcerations. The discolouration of the face also extended on the outside of the lip downwards over the chin and neck, covering a space of seven or eight inches in diameter, the whole, especially that on the face, being rather more full and distended with blood than natural.

The history of the case was this. The mark, as above stated, was congenital. About four years since the lip and tongue began gradually to swell, and the former very shortly ulcerated. The ulceration has occasionally healed since that time, until the last year, when it has been permanently enlarging. On making pressure on the lip the blood can be gradually expelled, returning again immediately on the pressure being withdrawn. The

same is the case with the tongue. Since the erectile tissue has been developed in the lip the discolouration of the face has become more marked, has extended, and is evidently partaking of the character of the erectile tumor in its neighbourhood. This case was evidently a very critical one; and the two most prominent dangers which appeared to threaten him were these: First, a cancerous degeneration of the ulcerated lip; and, secondly, alarming hæmorrhage, which was likely sooner or later to take place, and which must, in all probability, prove rapidly fatal.

The following is the course I proposed to him, in consultation with Dr. John C. Warren: 1st. to have the left carotid artery tied; 2nd, after a considerable interval of time to tie the right carotid; 3rd, to attack whatever portion of the tumor remained by means calculated to produce contraction of the vessels and obliteration of the erectile tissue. To this course, after weighing well all the dangers connected with it, the patient agreed, and on October 5th I tied the left carotid artery. He recovered from the operation, and was out in about ten days. At that time the face had become more pale, the erectile tissue and the large tumor of the lip had very much diminished in size, and the painful ulceration which surmounted it was rapidly healing. The patient seemed to be in perfect health. He was advised to go home, remain three or four weeks, and then return to have the other carotid tied: in the meanwhile to apply a strong solution of the sulphate of zinc, by compresses, to the inside of the lower lip.

Nov. 7th. When the patient returned from the country, it appeared that the tumor of the lip was diminished one half. The fulness of the face and neck was less; the discoloured parts were much paler than when he left town. The size of the tongue was less, and the ulcerated spots on it had quite healed. His health had remained good. It was determined, therefore, to proceed at once to the ligature of the carotid of the right side.—The day previous to the operation I made a compression on the artery for about five minutes without any obvious inconvenience to the patient, and with much encouragement to myself as to the event of the next operation. The patient being placed in a sitting posture, the carotid artery was laid bare, and a ligature passed under it. It was dilated about one-third more than its natural size. He was then placed on his bed, with the head slightly elevated; the state of the pulse was now explored, and found to be eighty in the minute. The ligature was drawn tight. At first he exhibited no change, but shortly after the pulse appeared to labour, and became slightly irregular; the only symptom noticed in the patient was that he became drowsy. After waiting about fifteen minutes the second knot was tied, and the wound dressed. No inconvenience was experienced from this operation, farther than a slight faintness during the afternoon on attempting to raise his head. He was directed to keep perfectly quiet, and to maintain strictly the horizontal position. On the third day there was a slight soreness about the larynx, which lasted three days. He is now, November 19th, at the end of ten days, in good health, and is able to go down stairs. The face is much paler than before the last operation, and the morbid appearances are diminishing.

Nov. 26th. The ulceration of the lip is quite healed; but the lip itself is still thick and somewhat everted by the erectile tissue, which enters into its whole substance. On examination of the part it was concluded that although this swelling was gradually diminishing, yet it would not wholly disappear without a further operation; and that, as the patient lived at a considerable distance, the disease, if disposed to return, might get beyond control before the proper remedies could be applied to check its increase. It was therefore determined to remove the diseased portion of the lower lip by a V-like incision. Previously to this, and in order to avoid hæmorrhage, the following operations were performed. A cataract needle was plunged into the vascular texture on the left side, and carrried in different directions, so as to break up and destroy its organization.

Nov. 29. A final operation was performed. A strong compression being exercised by means of two steel forceps prepared for the purpose, on each side of the lip, so as completely to interrupt the course of blood into it, a portion not less than two inches in length at its free edge was removed by a triangular incision. At first there was not the slightest hæmorrhage, the two lips of the wound remaining perfectly dry; on the compression being removed, however, blood gradually oozed from the whole cut surface.—This was easily ckecked and the edges of the wound approximated by a number of points of the interrupted suture, and a powerful compressing bandage applied.

For the first twenty-four hours he was carefully watched. Towards evening a coagulum was found projecting from the wound, which was removed. From this time there was no farther hæmorrhage, or bad symptom, and the wound healed by the first intention.

Dec. 12. The patient returned home quite well. Previous to the last operation, and after the ligature of both carotids, he was present at a meeting of the Boston Society for medical improvement, and on the day he left town he was seen by various gentlemen of the profession. The discolouration of the face had become much paler, and that of the neck and chest had almost wholly disappeared. The ear had lost its swollen and deep reddish colour, and had become of a natural size and of a pale aspect.

*Remarks.*—It is now rather more than forty years since Sir Astley Cooper first applied a ligature to the carotid artery for aneurism, and the operation at that time was looked upon with great distrust from the fear of a fatal disturbance to the functions of the brain. It has since been frequently repeated, and with as good success as perhaps any of the greater operations in surgery. It remained to be proved, whether both carotids could safely be tied without destruction to life. One case in this country, performed by Dr. Mussey, in 1827, and two or three abroad, go to prove the practicability and safety of this operation, if done with proper precautions. The great object appears to be, that sufficient time should elapse between the ligature of the carotids to allow the collateral vessels which supply the brain to be dilated, so as to carry the quantity of blood required for the performance of its functions.

In Dr. Mussey's case, the second ligature was applied at the end of twelve days, and without any uncommon symptoms on the part of the patient. Eight years afterward she was well, although occasionally troubled with cerebral plethora.

Professor Kuhl, of Leipsic, tied the left carotid artery in a man 53 years old, for the cure of an extensive aneurismal disease of the scalp. This patient had convulsive motions and vomiting during the operation. A profuse hæmorrhage from the tumor rendered it necessary to secure the right carotid artery on the forty-first day. The patient recovered, but not until after hæmorrhages from the tumor and suppuration, and considerable trouble in the cerebral functions. Two other cases have been given by the London Medical Gazette, as performed by Mr. Preston, of India, for the disease of the brain. In one case the second ligature being applied at the end of eleven weeks, and in the other at the end of four weeks. In these cases, although the condition of the patient was not improved by the operations, no severe symptoms on the part of the brain followed the obstruction of the blood through these vessels.

Other cases may be adduced, in which both carotid arteries have been obstructed by disease, such as aneurisms, or other tumors in their neighborhood, without destruction of life. These show, that if the nature of the case forbids a resort to any of the other resources of surgery, this operation offers a reasonable chance of success and safety to the patient. To the cases that are mentioned of partial obstruction of the vessels supplying the brain, the following very interesting one, in which all the large vessels going to that organ were cut off, is given by Dr. Davy,

"The subject of this case was an officer of high rank, about 55 years of age, who first began to suffer in health after an attack considered to be rheumatism, in 1831. In September, 1835, he was taken suddenly ill, with a tendency to syncope and vertigo, frequently returning; but after this his general health grew better; he experienced vertigo seldom, and syncope never. It was now observed, that he had no pulse at either wrist, or in the brachials. His disease was now clearly perceived to be aneurism of the arch of the aorta, with an obstructed state, it might be inferred, of the great vessels arising from it, for no pulse could be felt anywhere in the course of those vessels, in the neck, temples, axilla, or wrist. The gentleman expired suddenly, while travelling, on January 11, 1837. Upon examination of the body, the aorta was found ruptured near its base, within the pericardium. The arch of the aorta was the seat of a large aneurism filled with coagulum. All the great vessels arising from the arch were completely closed up at their origins. The upper portion of the innominata was open; the right carotid and subclavian were also open, but rather diminished in size; the left carotid, subclavian, and vertebral arteries, as far as they were examined, viz., to the extent of two inches, were impervious, being plugged up with lymph. The intercostal arteries were observed to be large."

*London Medical Gazette.*

[The attempt to remove the lip without the ligature of the carotids would probably have been attended with fatal hæmorrhage, and even if the patient had escaped this accident, it would have left much diseased tissue remaining.]

*Remarkable case of Aneurism by Anastomosis successfully treated by various operations.*

The following case, treated conjointly by Dr. John C. Warren and myself, confirms the remarks with regard to the ligature of the carotids, and also possesses many other points of interest. The subject of this case is Asa Porter, an inhabitant of Nova Scotia, a healthy man, ætat. 33. He has on his forehead, principally below the roots of the hair, a little to the right of the median line, a soft, pulsating, irregular tumor about three inches in diameter, and from a half to three-fourths of an inch in thickness, which gives him a very formidable aspect.

This tumor is of a reddish colour, becoming redder and larger when the patient is excited, either by bodily exercise, or mental disturbance. It appears to consist of coils of vessels. It is easily compressed, and on removal of the pressure immediately enlarges again. A number of pulsating blood-vessels are seen to enter it from different directions, principally on the right side. Of these may be distinguished, first—the temporal artery, which is in a very enlarged and tortuous state as far down as the lower part of the external ear; second—a branch of the temporo-frontal artery; third—the facial or angular artery from the internal commissure of the eye-lids, On the left side are seen the left temporal artery, which is nearly as large as the right, and the left facial artery, which, with its fellow, the artery of the right side, and its accompanying veins, form a vascular tumor at the root of the nose. The veins themselves are of an enormous size, passing down from the tumor on either side of the nose, covering and partly obscuring the internal commissure of the eye-lids. Besides these vessels, the whole scalp in the neighborhood of the tumor seems alive with smaller arterial trunks, which are seen pulsating in every direction. On compressing the temporal arteries, pulsation in the tumor is much weakened, and when, in addition to these, the facial arteries are also compressed, pulsation ceases, and the tumor becomes flaccid. This tumor began sixteen years ago, without any known cause, by a small reddish spot on the right side of the forehead. It has gradually increased till lately, when this increase has been more rapid, especially within the last fortnight. There is an occasional throbbing of the carotid arteries, particularly that of the right side. The patient is also subject to distressing headaches, accompanied

with increased action of the blood-vessels of the tumor, and of the head generally. This vibratory action of the arterial system of the head, neck, and upper extremities is quite remarkable. He is incapacitated by it from all active exertions, and is therefore ready to undergo any operation that promises to relieve him.

The course of this tumor, if not arrested by surgical treatment, can be readily foreseen. The morbid action will gradually involve other vessels, until the whole scalp becomes filled with enlarged arteries. The vessels of the eyelids, of the face generally, and even of the interior of the mouth, are likely to be involved in this diseased action. The patient's condition will, in this way, become almost insupportable, and his life will, perhaps, be hazarded by the rupture of the tumor, which now seems almost ready to take place.

What means should be adopted to arrest its progress? Those which naturally present themselves in the first place, are of two descriptions:—First, ligature of the carotid artery. But in this case the ligature of a single carotid might not suffice to arrest the flow of blood into the tumor, since the vessels which supply it, although principally from the right, are partly from the left carotid. The ligature of both carotids would therefore be necessary; but the result was less likely to be successful than in the preceding case, on account of the greater distance of the tumor from the arteries tied, and from the probability of its having other means of supply through the vertebral arteries, which inosculate freely with the branches of the internal carotid, the ophthalmic in this case being unusually dilated. The second mode of operating which suggests itself, is to expose the different vessels supplying the tumor, and pass a ligature upon them. The objection to this course is the length of such an operation as the exposure of so many vessels would require. Are there any other means that can be devised besides these two? The tumor is much too large to admit the safe and effectual application of caustic. It cannot be cut out without the most dangerous hæmorrhage. It is too large and too much connected with the bone to admit the application of ligature *en masse* in its present state.

Four different measures were successively adopted.

1. The large vessels were interrupted by ligatures applied in a peculiar way, *i. e.*, by needles passed under the arteries, and compression made on them by a thread in the form of a figure 8.

2. The ligatures being insufficient to repress the action of the smaller vessels, caustic applications were resorted to for the purpose of destroying the morbid texture, and in part obliterating it by the inflammation produced by the action of the caustic. To this end a very free application was made of caustic potash, and repeated between twenty and thirty times.

3. Excision was performed of the remains of the vascular texture, after the arteries supplying it had been so far obliterated as to remove the apprehension of hæmorrhage.

4. Compression by adhesive plaster and a bandage had a sensible influence in finishing the cure. The general treatment gave important aid to the local applications. The patient was kept very still, and for the greater part of the time in bed, with the head much elevated. His food was restricted to the smallest quantity, so that he was reduced for a time to a state of total prostration of the muscular power. During most of the treatment, if a small addition was made to his food, its bad effect was generally seen in the production of arterial vibrations and the recurrence of headache. Abstraction of blood, and the use of purgatives were resorted to when necessary. It is worthy of remark, that while erysipelas prevailed all around this patient, he was never affected by it in the slightest degree during exposure of at least three months.

*American Jour. of Med. Sciences, April, 1846, p. 281.*

98.—TREATMENT OF ANEURISM BY COMPRESSION.—By W. R. Wilde, Esq., Dublin.

[An elaborate history of this practice will be found in the "Dublin Quarterly Journal for August, 1846," by Mr. Wilde, the talented editor of that work; in which we find a table of 29 cases—the first by Mr. Todd, in 1820, and the last in the present year, by Mr. O'Ferrall, of Dublin. Mr. Wilde ends his paper with the following conclusions:]

1. That numerous attempts have been made, during the present century, to cure external aneurisms, popliteal in particular, by means of pressure upon the artery between the sac and the centre of the circulation; and that various instruments have been contrived to effect this purpose.

2. That by such means it is more than probable that occasional cures were made.

3. That popliteal aneurism seems the most favourable for the application of pressure.

4. That to Mr. Todd is due the merit of having first fairly tried, and successfully applied the pressure treatment of popliteal aneurism in these kingdoms.

5. That no permanent position was established for the treatment of aneurism by compression, until the cases treated by Mr. Hutton, Mr. Cusack, and Dr. Bellingham, were brought before the profession at the Surgical Society of Ireland, in 1843.

6. That up to this period, the instruments made to effect the compression were defective, inasmuch as they applied the pressure on but one point.

7. That the improvement introduced by Dr. Harrison's patient, Hoey, of applying a number of clamps along the course of the artery, has done much to remedy this defect, and has afforded surgeons a very valuable hint on the subject.

8. That from the history of cases recorded by Professor Porter and Mr. Cusack, it would appear that it is not necessary, completely, to arrest the pulsation in the tumour, by pressure on the artery, in order to produce a cure.

9. That this cure is effected by means of a coagulum formed in the sac, either by lessening the current of blood flowing through the artery, or by some peculiar power of coagulation imparted to the blood, aided by the contraction of the sac.

10. That in order to effect this coagulation, galvanism has been employed, and appears to hold out hopes of success.

11. That from dissection we learn, that it is not necessary to obliterate the artery between the point of pressure and the sac, in order to produce this coagulum, and effect a cure.

12. That pressure has been tried, and produced coagulation, even when applied to the distal side of the sac.

*Dublin Quarterly Jour. of Med. Science, Aug.*, 1846, *p.* 131.

[With some of these conclusions Dr. Bellingham is not at all satisfied, especially the 7th, in which it is said that the practice of using clamps, in order to press upon different portions of the artery was introduced by Dr. Harrison's patient, Hoey; whereas Dr. Bellingham claims this important improvement for himself, not being aware at first that a similar method was described by Begin (Dict. de Med. et de Chirurg. Prat.) as having been employed both by Dupuytren, and M. Gama, of Strasbourg. Dr. Bellingham enters into a history of the treatment of aneurism, in a series of papers in the Dublin Medical Press, beginning with the number for Aug. 19, 1846, and in the Medical Press for Nov. 4, describes the different instruments which have been used. As this description may be useful, we subjoin it:]

*The Tourniquet Truss.*—The compressing instrument, which, under the name of the "tourniquet truss," was employed with success by Mr. Todd and Mr. M'Coy, has been already noticed. It consists of a band nearly similar to that of a hernia truss, except that the spring is stronger, and the

pad firmer. The pad is provided with an under plate, connected with the upper by a hinge, and a tourniquet screw passing through it, has the effect, when turned off, of compressing the artery with sufficient force to check its pulsation. This instrument is stated to have been used in one or two other cases where compression succeeded; but its principal use appears to have been to compress the artery at the groin, in cases of amputation near the hip-joint; it is figured by Blasius, as "the inguinal tourniquet of Lafaye;" under this name it is described in some other works, and recommended as well adapted for the purpose.

*Mr. L'Estrange's Tourniquet.*—In the year 1826, a very ingenious instrument for compressing the artery in the groin, in cases of amputation at the hip-joint, or very high up the limb, where the ordinary tourniquet cannot be applied, was invented by Mr. L'Estrange, of this city. This instrument, which is made of steel, forms three sides of a square, and in each side are sliding joints to allow of their being lengthened or shortened so as to fit any patient. Each extremity is provided with a pad; one of these is laid over the artery in the groin, and by turning a screw connected with it, the vessel is compressed, while counter-pressure is made upon the sacrum by the larger pad at its opposite extremity.

Mr. L'Estrange's tourniquet differs from other compressing instruments adapted to this part of the limb, in the long arm of his instrument (which is in front) passing across the pubes, and pressing upon the artery on the opposite side to that which it encircles; so that, in amputation at the hip-joint, or of the thigh near the trochanters, the artery is compressed without the apparatus being in the way of the operator. This instrument has been employed at some of the Dublin hospitals in amputation, in place of the ordinary tourniquet; it has been also successfully used where secondary hæmorrhage followed the operation for popliteal aneurism. Within the last few years, it has been employed in this country for making pressure upon the artery in the groin in some of the cases of aneurism already recorded, in which the treatment by compression is adopted.

*Sir P. Crampton's Presse Artère.*—In the year 1830, an instrument for the *immediate* compression of the artery in the groin, was invented by Sir Philip Crampton, which, slightly modified, was employed in several of the earliest cases where mediate compression was successfully used in Dublin. This instrument consists of a hollow splint, well padded, and of sufficient size to receive the nates and upper part of the thigh of the side on which we intend to make pressure, and sufficiently long to reach from the crest of the ilium behind to the middle of the thigh. From the upper and outer edge of the splint, a steel trap passes across to meet another from the lower and inner side; at the point where they meet, the lower is fitted with a slide, and the upper with a hinge; in addition, there is a sliding box, tourniquet screw and pad, with a sliding-bar to prevent lateral motion. To the upper and inner edge of the splint a spring is attached, which embraces the opposite side of the pelvis, and is continued into a strap which passes over the abdomen, and secures it above, while below, it is secured by a soft strap which passes round the thigh. This instrument is adapted to compress the artery as it crosses the horizontal ramus of the pubis. A figure of it has been given by Dr. Fleming, in the Dublin Medical Press, for May 3d, 1843; but it is now seldom used.

*The Clamp.*—The compressing instrument known at the surgical instrument makers' here, under the name of the clamp, consists of an arc of steel, having at one extremity an oblong padded splint, and at the other, a nut containing a tourniquet screw connected with a smaller pad: the latter, although acted on by the screw, is so connected with it as to be readily turned in any direction. In using this instrument, the pad is laid on the artery, and the vessel is compressed by using the screw, counter-pressure being made by the padded splint at the opposite side of the limb. It is constructed of different sizes, so as to be adapted to compress the femoral ar-

tery as it crosses the horizontal ramus of the pubis, or the brachial artery low down in the arm.

The clamp was first used as a compressing instrument in this city by a carpenter, the subject of popliteal aneurism, treated by Mr. Harrison. The pain occasioned by the apparatus originally in use, induced the patient to try if the vessel could be compressed by an instrument called the clamp, or cramp, which is used in his business for temporarily binding portions of wood-work until the glue intended to connect them becomes dry. It answered so well, and gave so little pain, that he continued to employ it in preference to any other, until a cure was effected. The workmanship of the original was, as may be supposed, rude, but it served as the model for those constructed since in this country.

At the London instrument-makers', the clamp has been known under the name of Oke's tourniquet, since the latter end of the year 1843. Mr. Storks, of London, informs me, that the model of this tourniquet (which was intended for the suppression of hæmorrhage), was forwarded to Messrs. Weiss by Mr. Oke, of Southampton, in September of that year, and that instruments upon this principle were manufactured soon afterwards.

The clamp, would, however, appear to be a much older invention; if we turn to the description of the instrument employed in the second successful case of popliteal aneurism treated by compression upon record, we shall find that it applies to the clamp now used. The case (which has been already noticed) occurred in the practice of Dubois, and was communicated to the Facultié de Medicine in March, 1810. The instrument (which is stated to have been constructed expressly for the purpose) "consisted of a semicircle of steel, both extremities of which terminated in pads; one was provided with a screw, the other not; the pad with which the screw was connected was laid upon the femoral artery, and, by turning it, the vessel was compressed, the counter-pressure being made by the other pad placed upon the opposite side of the limb." There can be no doubt that Dubois' instrument served as the model for that which bears the name of "Dupuytren's compressor." In Blasius' work, published at Berlin, in 1833, a compressing instrument is figured which very closely resembles the clamp; it is termed a nerve-compressor, and is referred to Moore as the inventor.

The clamp is a cheap and effective instrument, and not the least advantages which it possesses are that its construction is so simple that it is not liable to be put out of order; the principle upon which it acts is so plain as to be readily understood by the patient; and its application can be borne for a longer time, and with less inconvenience, than most other instruments. A figure of the clamp will be found in Mr. Teale's Retrospective Address on Surgery, for the years 1844-45, delivered at the meeting of the Provincial Association, held at Sheffield in July, 1845, and published in the second volume (new series) of their Transactions. (See Retrospect, Part xiii. Art. 119.)

*Messrs. Read's Aneurism Compress.*—This instrument, constructed by Messrs. Read, surgical-instrument makers, of Parliament-street, in this city, consists of a padded band which encircles the pelvis, and buckles in front, of a semicircle of steel which comes off from the back of this band (into which it is so fitted that it can be adapted to either side), and terminates in a ball and ring, with a screw and pad attached. The ball and ring, through the former of which the screw connected with the pad passes, permits of the latter being pointed in any direction the surgeon may wish; where the pad has been brought immediately over the artery, it is fixed by turning a thumb-screw, which causes the ring to hold firmly the ball within it. When the ball and ring join the semicircle of steel, there is what is termed "a quadrant," which permits of their being moved either upwards or downwards, so as to vary somewhat the point of pressure, and by turning another screw they are then secured.

This instrument, which is intended for the compression of the artery as

it crosses the horizontal ramus of the pubis, or of the femoral artery a little lower down, was used in several of the cases of popliteal aneurism contained in the list already given; it is a considerable improvement upon other instruments, and its application can in general be borne for a longer period than most others, as it compresses the artery in the groin; a clamp may at the same time be applied upon, the vessel in the middle or lower third of the thigh. The ball and ring of this instrument have been substituted with advantage by Messrs. Read for the fixed screw in the ordinary clamp.

*Signorini's Tourniquet.*—The instrument known under the name of the tourniquet or compresser of Signorini of Padua, scarcely differs from Dupuytren's compressor already described. It has the shape of a horse-shoe, and consists of two blades connected together in the centre, by means of a screw and rack. Each extremity is provided with a pad; by turning the screw those are brought into close approximation, and the compression effected. This instrument was employed in several of the cases of aneurism treated by compression, reported from the London hospitals, and contained in the list which I have given. A figure of it will be found in Mr. Cox's memoir upon amputation at the hip-joint; it was used to compress the artery in the groin in his operation, and is reported to have answered perfectly.

*Charriere's Compressor.*—This is an improved instrument upon the principle of Dupuytren's compressor, manufactured by Charriere of Paris. It consists of a semicircle of steel, made in two segments, which slide upon one another, which permits of the size of the arc being increased or diminished, so that the instrument can be adapted to any part of the limb. At each extremity is a joint "en charniere," which supports a pad, that which serves to compress the artery is moveable and is connected with a screw, by turning which pressure is made; a larger pad at the opposite extremity serves to make counter-pressure. This instrument (which has not been used in this country) is figured in the sixth volume of Bourgery's Medicine Operatoire.

*The Ring Tourniquet.*—This instrument consists of a flexible ring of steel about an inch in width, and of a greater diameter than the limb to which it is to be applied. At one point in its circumference is a screw connected to a pad, exactly opposite is a fixed pad, and by turning a screw these are approximated. When applied, this instrument makes pressure only upon two points—viz., upon the artery, and upon the opposite surface of the limb.

The right tourniquet is described in few treatises on surgery, and the name of the inventor has not been mentioned. It was used by the late Mr. Tyrrel in some cases of wound of the brachial artery at the end of the arm, which are reported in the first number of St. Thomas' Hospital Reports: the instrument was applied to the artery above the seat of the injury, with a tight bandage from the fingers to the elbow, and in all the cases a cure was effected without the formation of an aneurism. In one instance he had an opportunity of examining the condition of the parts after the patient's death from another disease; he found that the wound in the artery had completely united, and that the calibre of the vessel was perfect. In the last edition of Cooper's Surgical Dictionary this instrument is also described, and Mr. Cooper mentions it as being adapted to cases of compound fracture complicated with hæmorrhage, and to wounds of arteries. The ring tourniquet was used in some of the cases of aneurism created by compression contained in the list already given; it is a light, portable, and convenient instrument, and though inferior to the clamp, might be occasionally substituted for it.

*The Weight.*—In a case of femoral aneurism already recorded, a method of applying compression was adopted which appears never to have been previously tried; and which I found to check or to diminish the current of blood in the artery leading to the aneurismal sac with but little inconve-

nience to the patient. This consisted in a metal weight of from seven to nine pounds laid upon a compress or pad, placed upon the artery as it crosses the horizontal ramus of the pubis, the patient lying upon his back with the thigh slightly flexed upon the pelvis. It was resorted to, in the first instance, in consequence of the apparatus in use having gone out of order at a time when it was impossible to have it repaired. A four pound weight laid upon a tourniquet pad, was first tried, but not being found sufficient, a seven pound weight was substituted for it, which answered perfectly; in a second case it required a weight equal to eight or nine pounds to effect the same object; in both the patients preferred it to any instrument. It would therefore appear that the compressing force necessary to check the pulsation of the femoral artery in the groin is about equal to a weight of from seven to nine pounds.

The weight has the advantage over compressing instruments in its checking or diminishing the pulsation in the aneurism with little distress to the patient, as no common pressure is required, which is often as irksome as the direct pressure. It is not, however, applicable to every artery, the vessel must rest upon a solid substance, against which it can be pressed, as in the lower extremity, where the artery crosses the horizontal ramus of the pubis. The disadvantages which attend this method of applying pressure are, that the weight is very easily displaced on any change in the patient's position, and its use cannot be continued when he falls asleep, as it requires the assistance of his hands to maintain it in its place. These disadvantages were endeavored to be remedied by an apparatus invented by Mr. Carte, of this city, which was imperfectly tried in a case of popliteal aneurism under my care some months since, and which I shall now describe.

*Mr. Carte's Apparatus for applying the Weight.*—This apparatus consists of three parts—viz., a belt of a peculiar shape; a receiver in connection with it; and metal weights of different sizes. The belt which is made of leather lined with chamois, is shaped so as to fit accurately the hip, buttock, and upper part of the thigh; it almost surrounds the limb, and is secured on the outside by straps and buckles, one strap passing round the pelvis; immediately over the artery a circular hole is left in the belt, about an inch or a little more in diameter. The receiver (which is termed a "hopper," from its resemblance to the part in some machine) is made of very strong leather, has the shape of an inverted cone, the small end being attached to the edge of the circular hole in the belt. The weights which are of lead, and of different sizes, have a conical shape, so as to fit easily into the receiver, and are so shaped that the smaller end will pass through the opening in the belt, and rest upon a compress or pad laid upon the artery underneath.

The advantages of this apparatus are, that it is readily applied, and not easily displaced; as the thigh belt extends over a large surface, and there is no counter-pressure, the patient will suffer little inconvenience, and the amount of pressure can be graduated by having at hand weights of different sizes; its use may be combined with a clamp upon the artery lower down the limb.

*Messrs. Read's Apparatus for applying the Weight.*—This apparatus consists of a cradle composed of two light flat metal hoops or rings, joined together by a connecting flat piece of iron, into which the upper part of the thigh fits, and the hoops are so constructed that their size can be increased or diminished, as occasion may require. A ball and ring, similar to that of the "aneurism compress," comes off from the upper hoop, but instead of a screw, a smooth cylindrical iron rod moves in the ball, and is connected with a pad below. The apparatus is intended for the compression of the artery in the groin, which is effected by passing flat leaden weights, having a hole in the centre, down the rod connected with the pad, and their number may be increased until the necessary degree of pressure is made.

*Compression by Means of Two Instruments applied upon different Parts of the Limb, and alternately Relaxed.*—Notwithstanding the improvements which have taken place in the construction of compressing instruments, and the ingenuity which has been displayed in the invention of new and more perfect forms, it is almost impossible in the majority of cases to adapt any apparatus to a limb, which the patient will bear for many hours consecutively, if the pressure is sufficiently strong to diminish materially the current through the main artery. This object can, however, be attained in another way—viz., by applying two compressing instruments upon separate parts of the limb, one of which is tightened, the other not; and by thus alternating the pressure, we produce the same effect as if constant compression was maintained at one point, and the patient is enabled to keep it up for a much longer period than is possible under other circumstances.

*Mr. Millikin's Double-padded Compressor.*—An ingeniously contrived apparatus, intended to supply the advantages to be derived from the use of two separate instruments, was constructed some months since by Mr. Millikin, surgical-instrument maker, of Grafton-street, in this city. It had two separate pads at some distance from one another, each acted on by screws, by which separate portions of the artery could be alternately compressed. This instrument was tried in one of the cases of popliteal aneurism contained in the list which I have given, but I was informed that it did not answer so well as two separate instruments placed upon different parts of the limb. *Dublin Med. Press, Nov.* 4, 1846, *p.* 289.

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99.—PAIN AS A DIAGNOSTIC SYMPTOM OF AORTAL ANEURISM.—By Dr. O'B. Bellingham.

1st. Intense pain in cases of internal aneurism is the most certain symptom of erosion of the bodies of the vertebræ.

2nd. In addition to its severity, the pain presents two other well-marked characters—viz., 1st. It is referred not to the exact size of the lesion but to parts at some distance. 2nd. The patient suffers more from it at night than during the day.

3rd. That unless erosion of bone occurs the pain may be absent or comparatively slight, except in the cases already alluded to, where large nerves are compressed.

4th. That in aneurism of the descending thoracic, or of the abdominal aorta, where the pain has the characters I have mentioned, the aneurismal sac almost always springs from the posterior wall of the aorta, and has caused erosion of the vertebræ; whereas, when pain is absent, or comparatively slight, the sac will be found to spring from the anterior wall of the vessel, and the bodies of the vertebræ will be little or not at all engaged. *Dublin Med. Press, May* 20, 1846, *p.* 308.

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100.—PATHOLOGICAL ALTERATION OF ARTERIES, BY LIGATURE AND TORSION.—By Dr. Porta.

[Dr. Porta has for the last nine years been performing experiments on animals, to find out the alterations induced upon the arterial system by the ligature. He has performed more than 600 experiments on 270 animals, most of them dogs, and has placed in the museum many of the preparations, as proofs of authenticity.

He used, in his operations, those ligatures mostly employed in practice, as catgut, silk, prepared and crude, flax aud hempen threads, and hair; he found no material difference between the crude and prepared silk, or between those made of flax and hemp. He observes:]

Among the substances applicable to the ligature of arteries, catgut is doubtless the most strong and homogeneous. A series of eighty experiments proves that even of small diameter it has sufficient strength to compress an artery, divide its proper coats, and maintain them in mutual contact until obliteration or division is perfect; but it differs from the other ligatures, as it does not always divide the internal wall at the moment when the knot is formed, but becoming lax by a process of softening, it sometimes allows the artery to reopen. This, however, does not interfere with the success of the operation, when the relaxation is gradual and the internal plug is formed in time.

Still, from the experiments instituted, and partly related above, it appears that catgut, a day, or even some hours after its application excites adhesive inflammation in the cellular sheath of the artery, and becomes covered by a stratum of plastic lymph, olivary in form, which surrounds and buries it. This lymph at first becomes modelled into a soft, gelatinous, adherent tissue, which gradually becomes atrophied, and generally leaves a simple cellular web; or a ligamentous substance more close and opaque, designed to isolate the ligature and the artery; or more rarely suppurative inflammation is set up in the seat of ligature, and a circumscribed abscess is formed when the ligature remains, until it is thrown off. The catgut relaxes, softens, dissolves, and becomes confounded with the surrounding cellular tissue; or the artery upon which it rested being consumed, it becomes dry and stiff, and lays bare in the layers of the cellular tissue; or becomes concealed in the peculiar tissue of the cord remaining between the truncated extremities of the vessel; or confined in a cyst, or coating of the plastic lymph which first formed around it. The new cyst is at first simple and cellular, but afterwards it acquires consistence, and offers in its walls an external layer, strong and coriaceous, and a species of epithelium, or internal rosy, soft, mucous layer, containing the ligature and some secreted matter. This cyst is generally small, resembling a grain of rice or millet, and when thus small it is ordinarily attached and closely adherent to the ligature, following all its irregularities, thus partly assisting in the process of solution. But sometimes, by exorbitant exhalation, it becomes enlarged to the size of a pigeon's egg, or more, then resembling a true encysted tumor. In its last changes, if not discharged by the fistula, remaining after the operation, it withers and remains undisturbed among the tissues where it lies, or terminates by being with its cyst completely absorbed.

When compared with catgut, silk ligatures produced much more irritation, and excited suppuration more frequently, although in many cases simple adhesive inflammation alone was produced. Like the catgut, they are first covered with plastic lymph, then connected with the cord remaining between the two extremities of the artery, or they lie bare between the layers of the common cellular tissue, or become encysted. If not thrown off, the silk may remain inert during life; yet in some cases [the author says he has succeeded in demonstrating that after a long time it becomes softened, and may be absorbed. In one hundred and twenty experiments the ligature was discovered in one hundred and one cases, in nineteen (a sixth) it disappeared; in some of them it may have escaped observation, but as in most of those discovered the silk had undergone a gradual change, and great care was taken in the examination, the possibility of the absorption of silk cannot be denied.

[With regard to the effects of the ligature, suppuration more frequently occurs in man than in animals. The ligatures generally escape either from the original wound, or from a secondary opening; but, where both ends of the ligature have been cut, and union has taken place by the first intention, they have been known never to come away. On the effect of the ligature Dr. Porta remarks:]

The circular ligature applied upon an artery determines the following mechanical alterations:—Division of the proper coats, strangulation of the

cellular coat, and their approximation internally at each side of the ligature with the formation of a clot. In this condition the artery, in consequence of the operation, is subject to two kinds of inflammation, the adhesive and the suppurative. The experiments just related demonstrate the first kind, or obliteration by adhesion. The process of coalition of the tied artery has four periods:—The first, external arteritis and organization of the oliva cellulare (this implies a quantity of coagulable lymph exuded, covering the ligature, and taking the shape of an olive); the second, closure of the vessel; the third, isolation of the closed extremities, and detachment of the ligature from the intermediate cord; the fourth, assimilation of all these parts.....

The rapidity of the organization of lymph is extraordinary, beyond belief. At the close of the second to the third day the oliva is changed into a gelatinous tissue; and generally in less than a week the new cellular sheath is perfectly formed, and presents a most beautiful and beneficial provision of nature for the obliteration of the artery, and protection against the blood which threatens its future destruction.

The trombo, or internal coagulum, is among the first phenomena of the ligature of an artery, and arises, as it is known, from the stoppage of the blood between the ligature and the first lateral vessels. This purely physical phenomenon is general in tied arteries, but not so constant as to be observed in all cases. Of one hundred and forty experiments with the circular ligature the clot was not formed in twenty-nine, sometimes on neither side, and more frequently only on the side next the heart, or vice versa, and this without neighbouring lateral vessels: several times the clot has not formed, and the artery has remained permanently empty, notwithstanding an interval of some millimeters from these vessels. When the clot forms it may take place in a few hours, or in the first day: or the blood may not be completely coagulated on the third or fourth day. The larger a vessel is, the nearer the heart, subordinate to the action of this organ, and rich in lateral branches, the longer is the clot in forming; it is weaker, or is altogether wanting.

It is also erroneous to suppose that the clot is always formed in proportion to the capacity of the tied trunk, and to the distance of the first lateral branches; not unfrequently the clot is excessive, and passses beyond small and large lateral emissaries one or two millimeters in diameter; while in other cases it remains short, or slender and thread-like, and only fills a part of the channel. When largest, it scarcely forms a plug, or completely fills the closed end of the artery, exactly uniting its walls.....Once formed, the clot remains a long time unabsorbed, prolongs the process of assimilation, and it appears that it sometimes becomes permanent, traces being discovered several years after an operation; but when the artery goes through its last changes, the coagulum becomes white, hard, firm, almost calcareous, attenuated, forms a part of the ligamentous walls of the vessel, and then entirely disappears.

[Dr. Porta does not consider, as Travers and Jones did, that the division of all the coats was necessary for the success of the operation. The obliteration of the vessel then is, either by coalition and simultaneous assimilation of all the three coats at the spot tied, or, by a slow and insensible contraction, gradually converting the arterial tube into an impervious cord. But, it is to be observed, that most frequently the arterial tube is divided by inflammation, if it is not done so previously by the mechanical action of the ligature. The Torsion of arteries has been long practised; it was known to Galen and the Arabians. Dr. P. uses a small pair of dissecting forceps, with their internal surfaces scored and exactly joining their whole ength. The reviewer observes:]

The method is only applicable to wounded or divided arteries; and either simple torsion, or torsion after isolation of the vessel, may be employed. Simple torsion is adapted to small arteries of the fourth and fifth order;

they are seized with small forceps, the instrument closed and turned in the fingers, three, four, or six times, always in the same direction, and then the vessel is abandoned. In this way six, eight, or ten arteries on the surface of a large wound may be stopped in a very few moments. It may be necessary to repeat the torsion two or three times. The author frequently adopts this plan after amputations upon the radial, ulnar, tibial and intercostal arteries. Previous isolation, and from seven to ten turns of the forceps, are necessary for the larger arteries. The errors to avoid in the operation are the seizing one wall of the vessel only, or not taking a sufficiently firm hold, seizing part of the surrounding textures with the artery, and twisting too little, so that the proper coats are not ruptured, or too much so that the cellular coat is also broken.

The author made sixty experiments on animals, and many observations on man, to determine the anatomical effects of torsion, and the subsequent alterations in the artery. They are closely analogous to those produced by ligature, viz., circular laceration, and sometimes introflexion of the proper coats, strangulation of the cellular coat, and an internal clot, as mechanical effects; and adhesion or suppurative inflammation, as vital.

Several interesting cases, taken from the author's clinical practice, are given to illustrate the practical value of this method in the human subject. In the first, it was successfully employed in the brachial after amputation. No hæmorrhage ensued, but the man died in three days from pneumonia; vessel closed by clot and adhesion. Same results in the second case, in a man who died four days after torsion of the tibial; and in the third, who died nine days after torsion of the brachial. In the fourth case, torsion was applied to the femoral after amputation of the thigh; the patient died of pulmonar yabscess seventeen days afterwards: no hæmorrhage occurred, and the artery was found perfectly closed. The same result occurred in a case in which torsion was applied to the popliteal after amputation; the patient died in ten days also, from pulmonary abscess; and the popliteal was also closed in the sixth case, the patient dying of apoplexy fourteen days after the operation. In the seventh case torsion was applied to the femoral after amputation; the patient died in twenty-one days of phthisis, and the artery was found exactly in the same condition as if a ligature had been applied. The eighth and ninth cases are instances of the successful application of torsion to the arteries of the leg and forearm after amputation. In the tenth case torsion was applied to the femoral; but as bleeding did not cease, a ligature was applied. A ligature was also necessary in the following case, in which torsion was used and repeated upon the femoral unsuccessfully. In the twelfth case the leg of a boy was amputated below the knee, the popliteal was divided above its bifurcation, and twisted six times upon itself. When the compression was removed the artery was seen to pulsate violently, turn twice round, and throw a jet of blood from its centre. It was again twisted three times, and the bleeding ceased. The wound cicatrized without any other accident. The other cases are three of successful application and termination of the femoral, and two to the popliteal after amputations. A case is also given in which a large varicocele had produced neuralgia and atrophy of the testis, and a cluster of the veins was removed of the length of two centimeters.—Hæmorrhage to a large amount followed from the mouths of five or six large veins in the cord. Each of them was seized and twisted five or six times, and a common bandage applied. No hæmorrhage followed, and the cure was complete in a month."

The concluding paragraphs of this section [continues the Reviewer], are important, and we accordingly extract them. "Since I introduced torsion into this school, I have almost exclusively practised it for the obliteration of wounded arteries. From the beginning I kept an exact register to the number of four hundred; then I neglected to record the daily cases in hospital and private practice, in which torsion was applied, except in cases of

amputation. It was applied to the occipitals, temporals, maxillary, superior thyroids, some branches of the subclavian, the thoracic, external pudic, spermatic, &c., and to the digitals, so that there is no artery of the fourth or fifth order upon the surface of the human body that has not been repeatedly twisted, after accidental wounds or cutting operations, and the result of so much practice during nine years has been fortunate beyond every expectation. I well remember in some cases to have been obliged to repeat the twisting two or three times; but I do not remember that the ligature was ever necessary on account of the torsion having failed. Thus I have ceased to employ the ligature for wounded arteries of moderate size, and now employ torsion only; as to the advantages of simplicity and celerity it unites others, as it may be done without assistance, and does not leave foreign bodies in the wound.

With regard to the large arteries of the extremities, I have already applied torsion in sixty-five cases after amputations and disarticulations, principally performed in the Clinique, and some in private practice. Although the operation in these cases has not succeeded so fully and securely as in the preceding, yet in the majority it has answered. For the arteries of the fore-arm and leg, radial, ulnar, tibial, interosseal—torsion, either simple or after separation of the end of the artery, has constantly succeeded, except in two cases; in one of which the anterior tibial, and in the other, posterior tibial, gave way, and the ligature was required. On the brachial it has always succeeded; and of twenty-three operations on the femoral and popliteal it has failed in four cases, two already mentioned, the twisted portion having given way, and ligature being necessary. I know that with some surgeons of my acquaintance laceration and hæmorrhage have been more frequent, but that may depend upon error in method or management. Fricke has enjoyed very good fortune, having only one case of hæmorrhage in thirteen torsions of the brachial, femoral, popliteal, and tibial arteries. He, however, has no bounds to his enthusiasm, and prefers the new operation in all cases, and twists with success even ossified arteries, which are not susceptible of torsion. On the other hand, the cases of Delpech and Texter are inconclusive, and of no more weight against this operation than the first unfortunate trials of the Hunterian operation in France by Desault and Deschamps."

The author goes on to argue that ill success is more frequently to be attributed to incapacity in the operator than to the condition of the vessel. If not twisted enough, the current of blood will re-open it; if too much, the coats give way. He continues: "The results of practical surgery correspond with, and are even more favourable than the results of zootomy. In my series of experiments upon the carotids, subclavians, and femorals of dogs, sheep, goats, and horses, torsion in general succeeded; but in eleven cases out of sixty secondary hæmorrhage occurred, requiring either a repetition of the torsion, or the ligature, and destroyed more than one animal. Experiments on brutes, then, do not give a secure criterion to argue the same results in man; because here torsion of the mouths of vessels upon the surface of the wound is a ready and simple proceeding, much more likely to be successful than torsion after exposing, isolating, and dividing the large arteries in animals."

The conclusions are, that in wounds of arteries only, can torsion take the place of the ligature; and as it is perfectly safe and secure when practised on the smaller arteries, it ought to be performed when those arteries are divided. The question with regard to the larger arteries is not yet settled; but it would appear that although torsion answers in the majority of cases, still the ligature affords greater security against secondary hæmorrhage.

*British and Foreign Med. Review, July*, 1846, *p.* 84.

101.—NEW METHOD OF CURING CERTAIN ANEURISMS BY MEANS OF GALVANO-PUNCTURE.—By M. PETREQUIN, of the Hotel Dieu, Lyons.

[M. P. thinks it necessary to abate the force of the circulation in the affected vessels, or the clot formed is liable to be carried away by the current of blood passing through the tumor, particularly if the artery supplying it be beyond a certain magnitude. In the sac the blood should be as far as possible stagnant and motionless, and the patient recumbent or seated at perfect rest.]

To coagulate the blood in an aneurism, it is requisite, not only that the galvanic current should reach the surface of the tumor, and that it should be conveyed to a spot within it, but it is also indispensable that it should be directly transmitted through the blood itself by two opposing points. For this effect I employ steel needles, from seven to eight centimetres long (about three inches) fine and sharp, which may penetrate easily into the sac through the soft parts. There is here a double difficulty to be overcome; in reaching the seat of the disease they burn and cauterise the skin, irritate the nerves, and cause unavailing suffering, ecchymosis, and unfavourable inflammatory action. Again, they cause trouble by the loss of electricity, which may result in a failure of the operation. It occurred to me, therefore, to isolate the needles in an extent corresponding to the thickness of the soft parts to be traversed, taking care to leave the heads and points free. I succeeded in this object by means of a coating of gum lac, and better still with cutler's varnish. It is easy to show that the isolation is thus rendered complete; for the energetic action which takes place when the poles of the galvanic apparatus are applied to the head, or to any free part of the needles, immediately ceases whenever the poles are connected with any part of the needles covered with the isolating coating, and recommences as soon as the wires and needles communicate without its intervention—a convincing proof that the method is good. We may also use an enamel, or a china or stone-ware glazing. Next of the mode of placing the needles. In my experiments on the blood, the occurrence of coagulation was found to be most ready when the extremities of the needles were crossed; this, therefore, is the arrangement to be adopted; and when the aneurismal sac is of considerable size, we should multiply the points of coagulation, so that the nuclei formed at different points may finally pass into one common clot.

Thus I obtain the rule from experience, that we should insert the needles at opposite points for the better correspondence; that we should give them a direction obliquely or perpendicularly opposed to the current of the blood to interrupt it; that we should cross them, to render their effect more energetic, and increase their number in larger aneurisms, to obtain at once a good number of clots, to afford, as it were, a frame-work for the general coagulum; lastly, that it is advantageous to change several times the direction of the currents, in order that the galvanic influence may act in every direction, and thus produce a multitude of filaments stretched out to form the basis of a thread of coagulum amid the mass of the contained blood."

The first case in which M. Petrequin succeeded, was an aneurism of the temporal artery, the effect of an injury sustained by a fall from a height. The application of the galvanic current, according to the rules above stated, was kept up for ten or twelve minutes, and at the end of that time the pulsating tumour had become changed to a solid mass. Moistened compresses were applied and retained with some turns of a bandage, and the hard knot quickly disappeared. His second case was an aneurism at the bend of the arm, the effect of venesection. In this case some amount of coagulation was produced, but owing to the cowardice and unmanageableness of the patient, the attempt was finally abandoned.

In studying the phenomena of coagulation by a galvanic current, M. Petrequin recommends milk to be employed rather than blood, as affording

greater facilities for the exact observation of the circumstances which favour or retard the effect; and the result of his observations, on the best kind of galvanic apparatus for the purpose is, that a columnar pile, composed of separate small pieces, the number of which can be augmented at pleasure, with bits of cloth interposed, moistened with solution of muriate of ammonia, answers best. The importance of attention to all the particulars that can be collected from the cases in which success has been obtained, will be obvious to all those who have, in any degree, engaged in galvanic experiments. M. Petrequin next refers to the brilliant success obtained by Ciniselli, of Cremona, in a popliteal aneurism, by following the rules laid down by him. Our author's next case is also an aneurism of the bend of the arm, following venesection. The chief particulars of which are as follow :—

"The patient was an assistant in pharmacy, aged 30, affected with hypertrophy of the heart, whose brachial artery was wounded in venesection, whence a primitive false aneurism resulted. Some months afterward he applied to M. Petrequin. The aneurismal tumour was then larger than a hen's egg. It was the seat of active pulsations synchronous with the stroke of the heart. By compression of the humeral artery, the size of the tumour was diminished, and the pulsations became less evident. M. Petrequin, in the first place, adopted some treatment directed to the mitigation of the symptoms resulting from the disease of the heart.

"In three weeks the galvano-puncture was resorted to. Four needles, about three inches long, were inserted at four opposite points of the tumour, so that their extremities crossed within. The galvanic apparatus used was a pile, composed of sixty plates, about three inches square, the interposed pieces of cloth being moistened with a solution of sal-ammoniac. The brachial artery was compressed, so that the pulsations in the tumour ceased. Two of the needles were then brought into communication with the poles of the apparatus, by means of brass wires wrapped round with silk at the points where they were handled. The galvanic current was very intense, and gave brilliant sparks at intervals. The shocks were violent, the patient being held by the assistants. The tumour at first diminished in size, then it seemed to become tense and red, without any increase of density. The patient complained of a burning heat at the points where the needles were inserted, and around each there was a slight cauterization. In ten minutes the density of the tumour began to increase; there were evidently nuclei of coagulation already formed. The current was still kept up, alternated through each pair of needles. In fifteen minutes the tumour felt hard, and no pulsation was discoverable even when the artery ceased to be compressed. For five minutes more the current was kept up, and then, the needles being removed, compression was applied to the artery, and a bladder filled with ice placed on the tumour. For the first few days the tumour progressively diminished, without any unpleasant occurrence; then inflammation of the aneurismal sac arose, accompanied with dull pains. The punctures made by the needles showed black sphacelated points, rendering a fœtid pus, and small blackish masses, the debris of the coagulated blood in a semi-organized state. Thus, the sac became inflamed and suppurated, emptying itself by the apertures made by the needles. The suppuration lasted a few days, and the exit of the pus was favoured by a slight compression. Twelve days after the galvano-puncture, it was ascertained that the tumour had completely disappeared—that there was no longer any trace of the aneurism—and that the circulation in the radial and ulnar arteries was restored. On examination, it was discovered that the brachial artery was very superficial, and that a second brachial artery ran deeper and posterior to that which was wounded.

Our author ascribes the inflammatory symptoms which arose in this case, to the want of an isolating coating on the needles at the time of the operation. M. Petrequin's next case is one of popliteal aneurism, in which the

cure was effected without any unpleasant accompaniment. The needles were applied exactly as in the last case, with the exception that they were covered with an isolating coating in the middle part. The galvanic current was kept up for sixteen minutes, at the end of which time the tumor had become hard; the pulsation had ceased, and no arterial sound could be heard; the skin was neither red nor tense, except that there was a slight rose-coloured areola, of small extent, around the needles. The patient made no complaint during the operation. The tumor progressively declined in size, though at the time of his dismissal, nearly a month after the operation, it was still of the size of a small egg; before the operation, it was the size of the fist. The next case is also one of popliteal aneurism, which M. Petrequin cites from the Milan Medical Gazette, as treated by Favale, of Naples. The case was complete; the skin, however, inflamed and suppurated. It is not stated whether or not the middle part of the needles had received the isolating coating.

The last case contained in M. Petrequin's memoir, is one of aneurism at the bend of the arm, the effect of venesection. In this case the plan of proceeding was the same, and the success complete. The report extends only to the ninth day after the operation: but up to that time nothing untoward had occurred. M. Petrequin suggests the employment of the galvano-puncture in some other diseases besides aneurism; for example, in varix, erectile tumors, sanguineous tumors, &c.

*Monthly Jour. of Med. Science, Nov.* 1846, *p.* 374.

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102.—CASE OF CAROTID ANEURISM, IN WHICH GALVANISM WAS APPLIED TO THE BLOOD IN THE SAC, BY MEANS OF ACUPUNCTURE. —By J. Hamilton, Esq., M.R.I.A., of the Richmond Hospital.

[The relation of this mode of operating may prove of service to those who may desire to try its effects. Obstinate vomiting existed from the pressure of the aneurism, upon the par vagum, and the case was one cut off entirely from the usual resources of the art of surgery, by extensive constitutional complications:]

May 15th. In the presence of my colleagues, Drs. Hutton, Macdonnell, and Macdowell, and Mr. Stapleton, of Jervis-street Hospital, I proceeded to apply the galvanism to the tumor. The state of the aneurism previous to the operation was as follows:—It was about the size of a hen's egg, but rather flat, of somewhat irregular shape, with a round, smooth projection on the inside, where the walls of the sac appeared thinnest. The centre of the tumor was on a level with the cricoid cartilage, the sterno-mastoid muscle was stretched over it; the pulsation was strong, but no bruit de soufflet was audible.

I passed a thin gold needle into the outside of the sac, till it had penetrated to about an inch; the same was then done on the inside, the thin, projecting part of the aneurism being avoided: the needles could be made to touch in the centre. I used needles of gold, as better coagulators of blood than those of steel; by the advice of Mr. Fagan, the electrician to the hospital, who was kind enough to regulate the galvanic battery for me, they were isolated everywhere, except at the point, by a varnish of shell-lac. The battery used was one of Smee's, consisting of twelve zinc and silver plates. The action was given very gradually, by, at first, only immersing the plates in two or three inches. When the whole force of the battery was used, it only caused moderate pain, and produced slight contraction of the muscles; he compared the pain to the prick of a leech. At the end of fifteen minutes the coagulation of the blood was not such as to cause any remarkable change in the tumor, but it appeared to beat with less force at the outside. After this the pulsation became evidently less, the tumor firmer and larger, and he began to complain of uneasy, weighty sensations, and very severe pain, which he compared to his throat being held

fast by the teeth of a dog. He said he suffered much from pain in the left side of the forehead, with lightness and other unpleasant feelings. The sensations in the tumor were very distressing, and those in the head, from their violence, assumed rather an alarming character; but the most serious symptom was the great increase of the swelling, as coagulation took place, chiefly in a direction upwards and downwards, in the course of the sterno-mastoid muscle; this seemed the chief cause of the pain and the tight feel in the throat.

At the end of twenty-five minutes complete coagulation had taken place in the aneurism, which felt solid, and pulsation was imperceptible; for these reasons the galvanism was discontinued. The discontinuance might have been demanded also for another reason, that round the positive needle, on the outside, the parts in immediate contact were observed to vesicate, and then to turn quite black for the size of a spangle, the vitality being destroyed by the galvanic action: when this needle was withdrawn there was a slight flow of blood, but none from the puncture of the negative needle.

So far, therefore, as the solidifying of the blood in the aneurism, the operation had succeeded, but not without considerable grounds of uneasiness. The unpleasant feel in the head continued, with the pain over the left eyebrow; the pupil was observed to be contracted, and there was loss of sight in the left eye. He was restless, and tossed about, complaining much of the tightness of his throat; he had twitches in the lower extremities, and complained of being chilly, and the pulse fell from 74 to 60. With respect to the tumor itself, the sudden increase was sufficiently alarming, as it was three or four times larger at the termination of the application of the galvanism. The increase, as observed before, took place chiefly upwards and downwards in the course of the muscle; it reached from about one inch above the clavicle to an inch and a half below the ear. The tumor was also more prominent.

[The patient, however, died, apparently from exhaustion, produced by the continued vomiting, June 8th, three weeks after the first application of galvanism.]

*Post-mortem.*—A section of the aneurism showed the contents to be solid, the centre occupied by clotted blood, of the colour and consistence of black currant jelly; from a quarter to half an inch from the margin the layers were of a pale red colour, and had a fibrous arrangement, exactly resembling muscle; when they were removed the lining membrane was found smooth but uneven.

As far as coagulating the blood in the sac, the application of the galvanism in this case was successful, complete coagulation having been effected by it. From the proximity of the carotid artery to the heart, and the direct course of its trunk (both favouring the rapid current of the blood), as also from the very free anastomosis with the numerous branches of the corresponding artery, an aneurism in this situation is one least likely to preserve the coagulum formed by the galvanism. In the present instance, likewise, a successful result may have been prevented by the total impossibility of using sufficient pressure to obstruct the current, and prevent its washing away the newly-made clot. To be completely successful, repetition of the operation would have been required; my reasons for not deeming this advisable have been already stated. What I have observed, however, convinces me that in more suitable cases this mode of treating aneurisms will yet be found most valuable. The sudden and rather alarming increase of the tumor, which occurred during the application of the galvanism, should it be constantly observed, may fairly be brought forward against its use in aneurisms situated, as this one was, in the neighbourhood of important organs, which would be very intolerant of sudden pressure, although they may bear or accommodate themselves (as we know they do) to the gradual pressure of tumors.

It is not easy to account satisfactorily for this rapid enlargement; the perfect integrity of the sac shows it was not from extravasation of blood by rupture; moreover, no traces of blood could be discovered. We know that during the galvanic action a quantity of hydrogen is evolved from the negative pole; it would, however, have been scarcely equal to the actual amount of the increase; the sensation, also, was of something more solid than if the contents were gaseous fluid. It now appears to me more likely to have been caused by the galvanic influence extending beyond the sac, and coagulating the fluids in the cellular tissue around it, the coagulated matter having been afterwards absorbed. The size of the aneurism at the time of death was certainly not larger than it would have been in the usual progress of the disease, and if the galvanism had never been applied.

M. Petrequin insists on the necessity of the needles crossing, to produce a proper coagulum. The needles, in this case, though they could be made to touch, certainly did not cross, and yet coagulation was complete. But I have further reason for believing this is not necessary: I thought that, in performing the operation for the future, it would be as well to avoid, if possible, the entrance of the hydrogen gas evolved from the negative pole directly into the circulation. I therefore suggested to Mr. Fagan the experiment of putting an albuminous fluid into a small bladder, and to insert the positive needle into the fluid; but merely to apply the negative wire to the outside of the bladder. He accordingly filled a small portion of sheep's intestine with one part of white of egg and two parts of water, quite full, and without any air. He inserted the positive needle its whole length through the gut into the fluid, and applied the negative wire merely to the outside of the sac, and succeeded in producing a large tea-spoonful of mucous-looking coagulum, without a bubble of hydrogen in the fluid inside, but many adhering to the outside, and to a silver plate on which the sac was placed. We have no grounds to say the entrance of hydrogen into the blood is injurious; but the fact that coagulation can be produced without its necessarily being present is interesting. The condition in which the par vagum was discovered, may, perhaps, explain the incessant vomiting. It is scarcely possible to suppose that a nerve so closely connected with the functions of the stomach could be so much deranged in structure without considerable gastric disturbance. *Dublin Quarterly Jour. of Med. Science, Nov.* 1846, *p.* 539.

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103.—EFFICACY OF ACUPUNCTURE IN CAUSING OBLITERATION OF THE ARTERIES.—By Dr. Giacinto Namais, of Venice.

Dr. Namais, wishing to try if the application of needles alone was sufficient to produce a coagulum, without the aid of an electric current, the primary carotid of an old horse was transfixed with a long needle, such as is generally used in acupuncture, and which was left in its situation for twenty-four hours. The artery was not laid bare, but was transfixed in the spot where the pulsations were most distinctly felt. The animal was killed five or six days afterwards, by means of several ounces of cherry-laurel water being injected below the skin. It was found that the needle had passed from side to side of the carotid, and that in this situation there was attached to the artery, a fibrinous coagulum of more than two inches in length, and free from any other point of union to its cavity. This coagulum, resembling a polypus, filled with the interior of the carotid, which would have been changed into a solid cord if the animal had lived longer.

The needle which traversed the interior of the artery, Dr. Namais thinks, must have caused a slow motion of the blood at that part, and collected around it a deposit of its fibrine. This fibrine becoming firmer, increased, as may be supposed, the cause which induced the separation of this substance from the blood, by means of which the coagulum obtained such a size as to fill for a space the cavity of the artery. Its union with the ves-

sel commenced where the points of the wounded membrane were necessarily the seat of inflammation, and of some effusion of plastic lymph. Dr. Namais states that other experimenters had proposed the same plan, but with what result, he is not aware.

That which he undertook in a large vessel, such as the carotid of a horse, appears to him to be of such a conclusive and well-merited value, as to warrant a regular series of experiments being made of a like nature. For, if the introduction of needles alone be sufficient to cause the obliteration of an artery without the aid of the electric current, the cure of aneurisms would be attended with less trouble and danger than with the electro-puncture.—*Gazzetta Medica di Milano, Settenbre 5*, 1846.

*Monthly Jour. of Med. Science, Nov.*, 1846, *p.* 378.

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104.—CASE OF LIGATURE OF THE LEFT SUBCLAVIAN ARTERY WITHIN THE SCALENUS MUSCLE, FOR ANEURISM.—By J. Kearny Rodgers, M. D., New-York.

Although this case proved unsuccessful, yet the result convinced Dr. Rodgers that the operation is practicable and proper. On dissection, it was found that the ligature had passed through the coats of the artery; that the stump of the subclavian was filled with a firm coagulum, which was adherent to its inner coat for three-quarters of an inch. The hæmorrhage proceeded from the distal end of the artery, and, Dr. Rodgers is of opinion, came from the vertebral artery, which he thinks should be secured before the operation. He thinks it possible, however, that the thyroid axis may have furnished a part of the blood. The operation was performed in the following manner: The patient was laid on a low bed, with his head and shoulders raised, and his face turned to the right side. The light from the dome shone directly on the part to be operated on. An incision was made three inches and a half in length on the inner edge of the mastoid, terminating at the sternum, and dividing the integuments and platysma myoides. This was met by another extending to the sternal extremity of the clavicle, about two and a half inches. This last incision divided a plexus of varicose veins passing in the integuments, covering the clavicle to the subclavian. Free bleeding taking place from their cut and patulous extremities, it became necessary to check it by ligature.

The flap of integuments and platysma myoides was now dissected up, and the lower end of the mastoid laid bare; a director was passed under this muscle, and the sternal portion and half of the clavicular divided by the bistoury. This muscle was now turned up; and the sterno-hyoideus muscle, the omo-hyoideus, and the deep-seated jugular vein were seen covered by the fascia.

On turning up the mastoid, a portion of the aneurismal sac strongly pulsating, was brought into view, overlapping about half the width of the scalenus, forming now the outer part of the track through which I was to pass, showing fearfully one of the dangers of the operation, which, from my previous examinations of the part, I had of course anticipated. The fascia being divided by the handle of the scalpel and the fingers, I passed in contact with the deep jugular on its outer side to the interior edge of the scalenus anticus, intending, for the purpose of avoiding as much as possible all danger to the thoracic duct, to reach this muscle fully half an inch above the rib, rather than at its insertion. I now felt distinctly the phrenic nerve running down on the anterior surface of the scalenus, and was confident that I should be able to avoid any injury to it. Having attained the inner edge of the scalenus, by pressing downwards with the finger, I soon discovered the rib, and, after some little search, easily found the subclavian artery. By pressing it against the rib, all pulsation ceased in the tumor, and, by removing the finger, pulsation returned.

I now felt that great care was necessary to detach the artery, and avoid danger to the pleura and thoracic duct. In accomplishing this part of the operation, I first tried Sir Philip Crampton's instrument, but, ascertaining that I could better carry the ligature around the artery and bring up its end, by the invention of Drs. Parrish, Hewson, and Hartshorne, of Philadelphia (long since given to the profession by them, and lately claimed by Mr. L'Estrange, of Dublin), I accordingly adopted that instrument. This part of the operation, as will be imagined, was not very readily accomplished. The great depth of the vessel (nearly the length of my forefinger), and narrowness of the wound, prevented a very easy management of instruments. The point was introduced under the artery, and soon directed upwards, so as to avoid injury to the pleura. The needle carrying the ligature was now detached from the shaft of the instrument, and drawn upwards, so as to include the artery. I readily tied the ligature, and tightened it with the forefinger in the bottom of the wound. All pulsation immediately ceased in the aneurism and the arteries of the extremity. The patient complained of no pain or unusual feeling in the head, as might have been expected from so suddenly changing the current of so large a quantity of blood. *United States Western Lancet, May*, 1846, *p.* 54.

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105.—STRUCTURE AND TREATMENT OF NÆVI.—By C. Hawkins, Esq.

[Mr. Hawkins makes the following observations on this subject:]

First, you may have observed what are called nævi flammei; marks of various extent of the surface only of the skin, in which it is obvious that numerous superficial blood-vessels, chiefly capillaries, are enlarged and tortuous, and anastomose freely with each other; the disease being generally stationary, even when covering the greater part of a limb, or nearly the entire surface of the body; varying in color, however, so as to be bright red, or purple, according to the condition of the blood, or the state of the circulation. Sometimes you see a single point only of arterial blood somewhat prominent, with vessels ramifying unaltered in structure around it, constituting nævi aranei; at other times, as in our patient, points of varicose veins only come to the surface, and sometimes in great number, if there is also anything below the skin of the same kind.

Secondly, and more commonly, you meet with cutaneous, or subcutaneous nævi, or a mixture of both, constituting distinct tumors of greater or less thickness, varying in colour as arterial or venous blood predominates, if the skin is affected, and generally purple or dark, when situated chiefly below the skin, as in this patient. These nævi obviously consist in general of tortuous and varicose and dilated capillaries, embedded in a rather tough cellular tissue, and you can empty them, or allow them to fill at pleasure, by varying the pressure upon them; the coats of the vessels being perceptibly diseased, so that hæmorrhage from them is dangerous, while the vessels going to them and coming from them are in their natural state. Sometimes the veins coming from such a congeries of diseased capillary vessels are also varicose and dilated, so that you can feel them below the skin, just as in a case of varicocele; at other times, one or more of the arteries going to them are diseased also, enlarged and softened to a little distance, pulsating visibly or sensibly, or communicating also a pulsation to the whole tumor; such an addition rendering them what John Bell has denominated aneurism by anastomosis.

But, in the third place, this surgeon has asserted that tumors of the blood-vessels of this kind have within them numerous cells, with which the blood-vessels have free communication, as in the natural structure of the gills of the turkey-cock, or the corpus cavernosum; and this description has been followed by Wardrop and other authors; and Dupuytren, following the same idea, has given the name of erectile tissue to these new formations, from their resemblance to the natural erectile tissues of the body.

The structure of nævi, whether pulsating or not, has been, however, a disputed question. Certainly, I think, there is in general no such formation of cells, but the tumor consists solely of dilated capillary and other vessels. Even in a remarkable case, which occurred in the London Hospital, and has been described by Mr. Curling, where large external tumors communicated with great masses of similar character in the chest and abdomen, the disease examined on this great scale consisted only of blood-vessels of various sizes in cellular tissue. But, in some few instances, there is an appearance of irregular cavities, which are probably dilated veins, communicating with the course of the undilated veins, as they contain coagula, and which have only the appearance of cells, when cut across, in the same manner as the tortuous vessel, folded in the vesiculæ seminales, gives the form of cells to those bodies.

It is very seldom that an opportunity is afforded of examining a large blood-vessel tumor; I had the power of doing so in the case of which this cast gives a likeness, in which you see that the tumor was of several inches in diameter, and not less than two inches in thickness; it was congenital, but had much increased for some time before the patient, a boy of seven years of age, came under my care, and numerous vessels, which bled a good deal from time to time, had lately appeared in the cutis. I removed it by ligature, and in the section of the tumor on the table, and in the drawing also, you may see in addition to the usual vessels, that several apparent cells exist. Now, some of these cells were filled with coagulum; their structure appeared identical with the other veins, of which they constituted, as it were, aneurismal pouches. So that in this respect they resembled what has been described and figured by Bell and Wardrop.

There were, however, besides these, some other cysts, which contained only serous fluid, and which were, to all appearance, close shut sacs—serous cysts; their size being about that of peas, one or two somewhat larger than this, and others smaller. Now, all tumors may form cysts, particularly when they grow without pressure, as into a cavity; even the fibrous tumor, dense as it is, having cysts, and even dilating so as to contain fifteen pints of fluid. In cellular tissue, serous cysts often form; occasionally many in close proximity, forming a half solid cystic tumor.

[The existence of cysts always complicate the diagnosis of nævi, they do occasionally form and arrive at a large size. Mr. Babington had a case in which there was an encysted tumor, entirely surrounded by a thin layer of the structure of nævus.] *Med. Gaz., June* 12, 1846, *p.* 1026.

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106.—SUBCUTANEOUS NÆVI.—By Sir B. Brodie, Bart.

After describing the appearance of subcutaneous nævi formed by vascular tumors in the texture under the skin, and not in the skin itself, Sir B. Brodie observes:—"You may very easily cure such nævi by caustic. For this purpose I have a very narrow knife, perhaps about the eighth of an inch in width; I introduce it into the middle of the nævus, and move it in different directions, so as to cut in pieces, as it were, its vascular structure. I then have a probe armed by dipping the blunt end of it into nitrate of silver, melted in a platina or silver spoon. The probe thus armed is to be introduced into the puncture made by the narrow lancet, and moved about, so that wherever the lancet has divided the blood-vessels, the caustic may penetrate also. It causes inflammation and sloughing, at the same time obliterating the vessels beyond the margin of the slough. When the slough is separated, there is a slight discharge of pus for a few days, and, if the tumor be of small size, you will find that it is cured; but, if it be large, the application must be repeated. I have used this on several occasions with great advantage, especially when the tumor has been on the face, where it was a great object not to destroy the skin. If you remove

one of these tumors, either by the knife, or by ligature, you must, in either case, leave a large cicatrix; but by applying the caustic in the way I have mentioned, you save the skin. I was requested to see a little child that had one of these subcutaneous nævi at the tip of the nose, giving it a very ugly appearance. By far the greater part of the alæ of the nose was involved in the tumor, and to have cut it out would have disfigured the child for life. I treated it according to the method which I have just explained. Several operations were required, but they succeeded perfectly; the child is quite cured of the nævus, and I will not say that you see no mark at the end of the nose, but there is so little that, unless your attention were called to it, you would not know that anything had happened. I have destroyed an extensive subcutaneous nævus occupying a very large portion of the face, in the same manner, there being very little or no scar afterwards.—*Lectures on Pathology, Surgery.* *Med. Gaz., July* 31, 1846, *p.* 216.

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107.—THE TATTOOING OF MOLES ON THE SKIN, PROPOSED BY PAULI.

The part should be washed with soap and water, and rubbed till the blood is introduced into the most delicate branches of the erectile tissue; the skin is then made tight and covered with colour similar to the natural colour of the skin, which is formed of white lead and carmine. Three needles, sunk into a cork pad, so that their points project, are then thrust into the skin, and their points from time to time dipped in the paint. In extensive spots, we must proceed gradually, so as not to produce too great swelling. The most difficult part is the choice of colour corresponding to that of the skin.—*South's Translation of Chelius.*

*Med. Gaz., July* 24, 1846, *p.* 155.

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108.—TREATMENT OF VARICOSE VEINS.—By C. F. Skey, Esq.

[When many veins of a limb are in a varicose state, as generally happens, the usual modes of treatment, whether it be by ligature, pressure, or division, will be too limited to remove the disease entirely. Mr. Skey proposes a plan which is both entire and permanent. He observes:]

The treatment my past experience fully justifies my recommending for adoption consists in the entire obliteration of the trunks and many of the branches of the saphena veins, both major and minor, by very small caustic issues, applied on the projecting veins, however large or numerous they may be; and, in suggesting which, I believe I can pledge myself to two conditions: first, that the function of the vein on which the issue is made, is from that hour suspended; and, second, that the operation of the issue so applied, is unattended with danger of any kind. The operation appears to be complete, and immediate. The current of blood is arrested; nor is the obstruction to the circulation thus caused, apparent in any symptom of congestion resulting from it.

It may be inferred from this circumstance, that the blood returned to the femoral vein through these cutaneous channels is, in reality, much smaller in quantity than the size of these vessels would lead us to infer. It will, however, be recollected, that in proportion to the enlarged size of the veins, and their contorted form, is the quantity of coagulum contained within them, by which the circulation is necessarily obstructed, and they present the reality of venous aneurisms; *i. e.*, of dilated veins, partially filled with coagulated blood. The proportion of coagulum doubtless varies a good deal, for we occasionally observe its almost entire absence, the veins retaining the softness on compression, due to the fluidity of their contents. However large and projecting the vein, be its contents fluid or solid, on the part most projecting, an issue may be made, so far as I have seen, without the remotest degree of danger, or any other evil consequence.

The material I employ for this purpose is the Vienna paste, a compound of quick lime and caustic potash, in the proportion of five of the former to four of the latter. These ingredients are mixed into a paste with spirits of wine; and in these proportions, which I cannot pronounce to be strictly those of the "Pate de Vienne," a caustic may be applied, which will readily destroy the surface without causing the excessive pain attending the application of the pure potash alone, nitric acid, or other similar agents. Under some circumstances it may be desirable to diminish the proportion of the caustic. The limb should be examined in the upright position of the body; the projecting veins marked with ink to the number requisite, including all the most salient points in the trunk and branches. While in the horizontal posture the places thus marked should be insulated with a circle of plaster of three or four thicknesses, the diameter of which will vary with that of the swelling beneath, but it is very desirable on all accounts to make it as small as possible. I have found one quarter to one third of an inch to suffice in the plaster, and the issue itself will not exceed the size of a fourpenny-piece, or less.

The caustic may be removed at the expiration of half an hour, and the leg dressed and rolled lightly. In the course of a week or ten days the eschars come away, and the wounds are healed by ordinary means. But, inasmuch as they are not altogether ordinary wounds, I wish to say one word on their management. Two circumstances should be kept in view militating against their early cicatrization, and sometimes so positively, as to protract the recovery for many weeks, and form a serious objection to the treatment. First, the existence of a sore on the leg or foot at a remote distance from the centre of the circulation, which is under all circumstances tedious and protracted in its progress; and, secondly, the disease itself infers a languor of circulation unfavorable to early healing.

In truth, the ulcers occasionally spin out their existence, especially when large, to a very inconvenient duration. I have seen examples, in which one or more of them have defied the curative means employed for three or four months; until, indeed, the patience of the subject of them has been almost exhausted. It should be kept in mind that varicose veins owe their existence to inactivity of the action of the heart, or, at least to some cause tantamount to it; and to this inactivity or want of force, and not to any thing specific in the nature of the ulcers, is their duration to be referred. Hence the necessity of restricting the issues to the smallest possible size, compatible with the destruction of the vein; and of such any number may be made. The ordinary number I have employed has been six or seven. I have made twelve on one leg at one time.

The modes of obviating the evil, and of establishing an active health to the circulation of the limb, are such as are ordinarily employed for this purpose, and by the judicious application of which, the period of healing may be kept nearly within the limits that control them in other persons. I often commence the treatment with a course of bark or other tonic agent before the operation, employed for two or three weeks, especially in persons of a feeble constitution. When the eschars come away the ulcers should not be neglected, but carefully dressed with some form of stimulant. I commonly use the flue of dry lint, or black wash. The removal of the sloughs will be hastened by the application of a roller, applied around the limb from the period of a few days after the operation. I have occasionally made these issues with pure caustic potash, and also with potash once diluted, but the operation is rendered more painful, without any corresponding advantage; and without wishing to attach any marvellous virtues to that form which bears the title of Vienna paste, I think it preferable to any other form I have employed or seen employed. The slough is complete and the pain considerable, but not excessive. If too large a quantity of spirit be used, and the paste be too soft, it will of course diffuse its influence beyond the circle of the plaster. *Med. Gaz., Aug. 7, 1846, p. 236.*

109.—REMARKS ON AN EASY METHOD OF STOPPING PROFUSE HEMORRHAGE FROM THE NOSE, ESPECIALLY IN OLD PEOPLE.—By Dr. Oke, of the Royal South Hants Infirmary.

[It has been thought of considerable efficacy in bleeding from the nose, to hold up the arm of the same side, in order to empty the brachial vein, and thus allow of a freer current to traverse the axillary artery. The old plan of plugging the nostrils anteriorly and posteriorly is perhaps the most efficacious plan of any, but this is very disagreeable to the patient, and the materials for doing it are not always at hand. Dr. Oke proposes a new and simple plan, which can at all times be easily and instantly adopted. He says:]

When the hæmorrhage continues to be so profuse as to peril the life of the patient, let the lesser finger be introduced up the nostril and pressed upon its base and sides till the bleeding is stopped. Having kept up the pressure for a few minutes, a small compact dossil of lint, made wet with cold water and rolled upon powdered alum (if at hand), is to be carried up to the point which has been compressed with the finger, and held there by the same pressure; after this other little compresses of the same kind are to be successively laid on by the handle of a teaspoon, or some such means, till the roof of the nostril supplies the pressure of the finger.

Case 1. I was called in the night to a lady of advanced age and slight form, on account of a profuse bleeding from the left nostril. When I arrived, I was astonished at the quantity of blood she had lost, which was not less than two quarts and of a venous color; as the blood was still flowing profusely, I immediately introduced my little finger into the left nostril, and making pressure upon its base, stopped the blood instantly. The bleeding point was compressed in the manner before described, and the hæmorrhage never returned.

Case 2. A gentleman of agricultural pursuits, about 60 years of age, had from time to time consulted me for symptoms of angina pectoris. He could not walk any distance without being arrested by distressing pain across the chest and down the arms; and as it was quite clear that the symptoms were caused by an organic lesion of the heart, I was persuaded that his life would terminate suddenly in some future paroxysm. After these symptoms had continued for some years, I was hastily summoned to visit him by his medical attendant, on account of a nasal hæmorrhage which had recurred at intervals to an alarming degree. Upon my arrival the right nostril was bleeding a stream, but as his countenance was not blanched, and his pulse was full and strong, and as I was aware that he had long been affected with disease of the heart, I recommended that the bleeding, which was of a venous character, should be allowed to continue for a time, as otherwise it would probably be necessary to take blood from the arm. However, thinking it right before I left him to see if the hæmorrhage could be controlled by the above simple method, I introduced my finger into the nostril, and by pressing upon its inferior surface, stopped the bleeding at once; and had it been necessary to prevent the return of the hæmorrhage, it could have been effectually done as in the first instance. The following day he died suddenly from another attack of angina.

*Prov. Med. and Surg. Jour., May* 27, 1846, *p.* 239.

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110.—ERGOTINE AS A STYPTIC IN WOUNDS OF ARTERIES.

M. Bonjean has strongly advised the use of ergotine (ergot of rye) to arrest hæmorrhage from wounded arteries. It is stated that in a recent experiment, he divided the right carotid artery of a horse by a transverse incision, which comprised one-third of the circumference of the vessel. The hæmorrhage was speedily arrested by the application of ergotine.

M. Velpeau, in commenting upon these experiments, observes that two

circumstances are invariably forgotten by experimentalists:—1. That the blood of animals is much more plastic than that of man; hence, what may prove a styptic in one case, will fail in the other. Wounds of large arteries in the horse, ox, and sheep, rarely prove fatal by hæmorrhage. This ceases spontaneously after a certain time; and this natural result gives the impression that the cessation is due to the application of the remedy; hence the number of styptics which have been successively brought before the profession, and then have fallen into desuetude. 2. In the human subject, many arterial hæmorrhages cease either spontaneously, or on the application of slight pressure, so as to render the application of a ligature unnecessary. The result is then erroneously attributed to the substance applied. Those practitioners who have used ergotine, or ergot of rye, in hæmorrhages, have obtained no conclusive results; and if in uterine hæmorrhage during labour this substance has been found useful, its mode of action is probably that of causing the uterus to contract upon itself, and not by exerting any specific influence on the blood or the arteries.—*Comptes Rendus. Medical Gazette, Aug. 7*, 1846, *p.* 260.

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111.—BLEEDING FROM THE FOOT.—By M. Malgaigne.

We copy M. Malgaigne's account of this simple operation because we think it is far too seldom had recourse to in this country, seeing the great relief it is capable of affording in many affections of the portal system and generative organs, and the ease with which blood may frequently be so obtained, when its abstraction from a vein in the arm is either difficult or impossible. The internal saphena vein may be opened in front of the internal malleolus, or the external saphena in front of the external malleolus; but the latter is seldom large enough to be opened when the internal is not.

The patient, seated in a chair or at the edge of his bed, first places his feet in hot water, until the veins are very apparent: then the surgeon selects the foot, wipes it, rests it on his knee, protected by a napkin, and places the ligature two fingers' breadth above the ankle, moderately tightening it, and securing it with a bow on the opposite side. He then explores the vein, puts the foot again in the hot water, prepares his lancet, re-takes the foot, and opens the vessel. Care must be taken not to prick the bone and break off the point of the lancet. If the blood flows in a jet it is caught in a basin, if it only dribbles slowly the foot should again be put in the water. We can then only judge of the quantity by the time or redness of water. When the bleeding is supposed to have been enough, the foot is taken out of the water and wiped, and a compress and figure of eight bandage applied. Care must be taken lest the water be too hot, or the foot plunged in too deeply. It is said that the weight of the column of the water tends to coagulate the blood, which stops the mouth of the opening. On this account the foot should be kept only just covered, and the wound wiped from time to time. It is well also to make the patient move his toes.
*Medico-Chirurgical Review, Oct.*, 1846, *p.* 423.

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112.—SUCCESSFUL METHOD OF ARRESTING THE HÆMORRHAGE OF LEECH BITES.—By A. Marshall, M.D., Belfast.

Whenever a leech bite bleeds profusely, and compression cannot be made, as over the neck, abdomen, &c., I wipe the cut quickly with a bit of lint, or fine linen, and while it is comparatively dry, seize a small portion of the integuments surrounding the bite with the finger and thumb of one hand, and between them continue to make a moderate, but not painful, pressure. If the child be restless and struggle, I loose the hold, but instantly dry and seize the cut as before. One may be compelled to repeat

this process three or four times, but ultimate success is certain. At every subsequent seizure, the hæmorrhage is seen to be more languid; and in a period varying from five to fifteen minutes, is completely suppressed. I may add, that the irritation attendant on leech bites is not of more frequent occurrence after this pressure.

*Dublin Quarterly Jour. of Med. Science, Nov.*, 1846, *p.* 561.

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113.—MODE OF ARRESTING HÆMORRHAGE FROM LEECH BITES.—By Dr. Houston.

Dr. Houston recommends the following plan for preventing excessive bleeding from leech bites, which he has found invariably successful. Take a small pinch from the felt of a beaver hat, pile it on the bite; or if there be several points, pile one respectively on each, and spread over the whole a piece of thin muslin, drawing it tightly, so that any blood which flows must pass directly through both; then, with a fine sponge, dry up the blood as it oozes out, and in a very short time both felt and muslin will have become dried by the coagulation of the blood in the thin fine meshes, and the hæmorrhage arrested. The muslin may then be all cut away, except the adhering points, which, in the course of a couple of days, will of themselves drop off, leaving the parts healed, and free from any such disfiguring marks as those which necessarily follow cemetery, caustics, or needles.—*Dublin Hospital Gazette, March*, 1845. *Med. Gaz., June* 26, 1846, *p.* 1125.

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114.—TREATMENT OF HÆMORRHAGE FROM LEECH BITES.—By F. L. Gervis, Esq.

[Mr. Gervis had a patient to whom it was necessary to apply leeches to the throat, for an attack of cynanche tonsillaris. One of the leeches fastened over the external jugular vein, and when it came off blood poured forth quite in a stream. Pressure, by means of lint, proving ineffectual, he dipped a dossil of lint into a strong solution of alum; this at once arrested the bleeding. The same application he has found instantly successful in arresting hæmorrhage after the extraction of a tooth. He recommends another method of arresting the bleeding from a leech bite, viz., the application of tobacco.]

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## ALIMENTARY CANAL.

115.—SEVERE WOUNDS OF THE THROAT INFLICTED FOR THE PURPOSE OF SELF-DESTRUCTION.—By A. M. McWhinnie, Esq.

[Their consideration is highly important, and he arranges them thus:—] 1st. Those in which the skin, superficial muscles, and vessels, are divided, and which are the most frequent in occurrence; 2nd. those in which an opening is made either into the fauces, pharynx, larynx, trachea, or œsophagus, and which are next in point of frequency; and, 3rd. those in which blood-vessels of large calibre, or other parts, have been injured, so as to cause a sudden or speedy cessation of life, and which are comparatively rare in occurrence.

*Treatment.*—If the superficial parts are simply divided, and there is no mischief done to the air-passages, &c., a suture or two, aided by the approximation of the chin to the sternum, will generally suffice. Where the wound has opened the pharynx, larynx, or trachea, our first object must be to inquire as to the extent of hæmorrhage which may have taken place, and to spare no pains, even at the risk of enlarging the wound, to secure

by ligature every divided vessel. Mr. John Bell says, that "they are often retracted among the cellular tissue, and that we are saved all trouble and care, except that of making our outward suture for uniting the external wound." These observations, coming from so eminent a surgeon, must carry with them considerable authority; but I cannot subscribe to so dangerous a proceeding. With regard to sutures, they should be employed only in superficial wounds; or, if allowable in deep ones, they must be confined to those cases in which the air-passages have escaped. In extensive wounds, where the cartilages of the larynx have been injured or separated from each other, sutures are irritating and hurtful. They cannot promote what never takes place in these parts, viz., union by the first intention; and by closing the outward wound, they will act in the most deleterious manner by confining the discharge, which should have as free an outlet as possible.

The wound is to be left freely open, and narrowly watched, in the event of any recurrence of the bleeding, when reaction has been established. The patient should be in a well-ventilated room, the head gently raised with pillows, and everything is to be avoided which may produce any bodily irritation or mental excitement. An elastic tube is to be introduced through the nostril, and, if the patient does not greatly object, should be allowed to remain in the œsophagus. Although it may at first produce some inconvenience, the patient will generally become accustomed to its presence. When the tube is passed, it should be quickly carried along the floor of the right nostril, and the finger of the left hand introduced, either through the mouth or wound, to guide its extremity into the pharynx. This is very important; for I have frequently seen the surgeon well-nigh foiled in his repeated attempts to introduce the instrument, in consequence of its itching against, or passing into the aperture of, the glottis, which it will be liable to do, if not properly directed by the finger of the operator. The distress has been so great that every resistance has been offered to its employment. Much of the comfort to be derived from our treatment depends upon its use. All attempts at deglutition, and even speaking, are to be avoided, that these extremely moveable parts may be kept as tranquil as possible. Every loose portion of cartilage or other tissue should be carefully removed, on account of the irritation and inconvenience produced. I have seen it necessary to take away the epiglottis, when nearly separated from its connexions. A case came under the care of Mr. Coote, in November, 1839, where, in an injury inflicted in a suicidal attempt, the arytenoid cartilage, and upper edge of one side of the thyroid, which had been detached, came out through the wound, together with the greater part of the corresponding thyro-arytenoideus-lateralis muscle. Sir Charles Bell relates an instance in which one of the arytenoid cartilages was divided, and a portion of it vibrated in the chink of the glottis; it acted as a foreign body, and produced suffocation.

The lightest and simplest dressings will be found best adapted to these cases; water-dressing, with fine linen or muslin—occasionally a light poultice placed over the latter. The wound should be constantly cleansed; and if very extensive, and in the neighborhood of the glottis, the introduction and frequent renewal of soft portions of sponge will be found very useful in absorbing the purulent discharge which might otherwise flow into the larynx. The only nourishment allowed for some time should be fluids. The individual who has thus attempted suicide should be carefully watched; for the melancholy and deplorable condition in which he is placed urges him to resort to every possible means to accomplish his end; and the strictest restraint, during the treatment, is sometimes absolutely necessary, to prevent the infliction of further injury. Great advantage is derived from the administration of opium and other narcotics, introduced by the œsophagus tube, or by means of enemata.

With regard to other internal remedies, these will be few and simple, in

the absence of cerebral and general febrile excitement, which, if present, must be combated by suitable treatment; and the great depression, both mental and physical, often supervening upon the cessation of the inflammatory symptoms, will demand the judicious employment of stimuli. Local and general bleeding, antimony, and mercurials, must be had recourse to, in the event of the lining membrane of the air-passages and lungs, so often productive of the most serious consequences in these cases, and the first symptoms of which we should endeavor to meet and subdue.

[The plan suggested by Mr. Liston is now generally adopted, of introducing a tube through the glottis, when there is an œdematous state of the mucous membrane; and in those cases when dyspnœa has supervened after some time, in consequence of excrescences or granulations encroaching upon the air-tubes, Sir Charles Bell's plan of performing tracheotomy must be practised.]

In general, we may augur favourably of superficial wounds of the throat. When deep, their danger diminishes in proportion as they are remote from the aperture of the glottis. Thus, wounds entering the mouth above the os hyoides, or dividing the larnyx below the glottis—i. e., through the lower part of the thyroid cartilage, or between it and the cricoid, will (as also wounds of the trachea, generally) do well; but, for reasons above mentioned, we should pronounce very unfavorably of a case where the incision has extended through the thyro-hyoid membrane, through the centre or upper part of the thyroid cartilage, or in any other direction towards the rima-glottidis, by which that part is exposed or injured. I have seen only one case of the kind do well, and that was not very severe; two fingers only could be admitted through the incised thyro-hyoid membrane towards the epiglottis, which was slightly injured. Still, however, a great deal of comfort may be derived from proper treatment, and the chances of a favourable termination may thereby be much augmented. These wounds, from the great surface exposed, are extremely tedious in healing—a process which must take place almost wholly by granulations; and it has been shown that the patient must not be considered safe for a considerable time after the healing of the external wound. *Lancet, Sept.* 5, 1846, *p.* 267.

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116.—GLOSSITIS.—By W. England, M.D., Wisbeach.

[Two cases present themselves as having occurred in the practice of Dr. England, of Wisbeach. Of the first case, the symptoms were the following:]

Left half of the tongue chiefly thickened towards the root, though the whole of the surface on the left side, as far as the median line, is elevated one-eighth of an inch higher than the right.

[It subsided in twenty-four hours upon the application of a solution of nitrate of silver, fifteen grains to an ounce of water; indeed, it appeared to act like a charm, no other treatment being adopted than aperients. In the second case, the tongue was much swollen, and deglutition, except of liquids, much impeded; articulation. also, was very imperfect. The nitrate of silver was also applied in this, as in the first case, and with a complete diminution of the swelling in two days; but a small abscess terminated the glossitis.]

In the long series of the Medical Gazette, I find the publication of only two cases, one (vol. 1841-2) by Dr. Graves, which, very similar to the case of J. H., terminated in abscess; the swelling being punctured, a thimbleful of pus made its exit, and the patient got instantaneous relief, and left the Meath Hospital the same evening. In Dr. Graves' case, the swelling, as in the two which I now record, was confined to the left half of the tongue. In the same volume of the Gazette, is another case of glossitis, producing suppuration, reported by Mr. Alfred Smee; and I am inclined to think with that

gentleman, that the "reason to be assigned for the rarity of abscess in the tongue is, perhaps, the absence of much cellular tissue in that organ." Dr. Mason Good makes no allusion to inflammation of the tongue, and the admirable lectures of Dr. Watson, in the Medical Gazette, are equally silent on the subject. *Prov. Med. and Surg, Journal, Sept.* 23, 1846, *p.* 453.

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117.—TREATMENT OF CARIES OF THE TEETH.—By C. E. H. Orpen, M. D., Birkenhead.

[It is difficult in many cases to prevent the progress of this important evil, chiefly because patients take advice when the disease is so far advanced, that the tooth will not bear the necessary pressure for the safe introduction of gold or tin; and the operator must then resort to the extraction of the tooth, or the use of silver amalgam, or what is now offered for trial by Dr. Orpen, viz., the application of nitrate of silver. He gives the following directions:]

Scrape out the entire of the softened carious part of the tooth, and rub its interior with a saturated solution of nitrate of silver, or with pulverised nitrate of silver barely wet. In this way the progress of caries may be effectually stopped; and a tooth thus treated will often remain for years, though without any stuffing, and exposed to all the variations of food and drink, without giving any trouble or pain, and without any reappearance of the caries. I know this to be a fact in many instances, though I am not a dentist; and I would beg leave also to suggest to all dentists, that in stuffing decayed teeth, they will always find it beneficial, after scraping away the softened carious parts, to rub the interior of the cavity, in a similar way, with pulverized or fluid nitrate of silver, before beginning to stuff them, which will similarly prevent the recommencement of caries.

*Med. Gaz., Sept.* 25, 1846, *p.* 554.

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118.—NEW SUGGESTION FOR THE APPLICATION OF THE TAXIS IN INGUINAL HERNIA.—By M. Grynfeltt.

The method now proposed by this surgeon for effecting the reduction of a hernia, is similar in its mode of operation to others which have been already proposed, such as the application of cupping glasses over the abdominal parietes. Its object is, by applying mechanical force to the contained viscera, to drag the protruded intestine back into the abdomen, instead of adopting the usual proceeding of endeavouring to push it back through the opening at which it has made its exit. The following is the description given by M. Grynfeltt of the manner in which he has applied his taxis, in the case of a female, who had suffered from a strangulated inguinal hernia for five days:—"We flexed the thighs as much as possible on the pelvis, leaving room, however, to grasp the tumor easily. The loins, thorax, and head were also bent forwards to the full extent, so that the whole body was, as it were, coiled up. The patient being placed in this position, it is easily imagined that complete relaxation of the abdominal parietes was produced. Next, with the fingers of the left hand, we seized the hernial tumor at its base, and compressed it slightly. At the same time, with the right hand, we brought the coverings of the abdomen as much towards the external inguinal aperture as was practicable, when, by a simultaneous movement with the fingers applied over the parts, we produced a traction on the hernial contents sufficient to bring them back into the interior of the abdominal cavity. At the first attempt we had the satisfaction of feeling under our left hand, which supported the hernial tumor, the movement of fecal matter, and of the gas contained in the protruded portion of the intestines; when, combining compression of the hernia with the traction of the intestines in the abdomen, we succeeded in the reduction in a few seconds.

Our operative proceeding, then, consists in drawing back the protruded portion of intestine into the abdominal cavity, instead of trying to push it back."—Gazette Médicale, Mai 30, No. 22.

We have no doubt that any cause which can produce traction in that portion of the intestine which is continuous with the contents of the hernial sac, is more likely to effect reduction of the protruded bowel, than direct pressure applied over the tumor. The difficulty, however, is to act in any way on the part of the intestine immediately in the neighbourhood of the protruded portion. Medicines administered to increase the peristaltic motion of the bowels cannot act; for we know that the muscular coat, for a considerable way above and below the constricted portion, is paralyzed. A plan, which was frequently pursued in olden times with success, was placing the patient with his head downwards, and shaking him up and down, so as to allow the abdominal viscera to gravitate towards the thorax, when a sudden reduction of the tumor was often obtained after the failure of the usual means. The object desired by M. Grynfeltt, we have no doubt, is more effectually obtained in this way, than by his mode of manipulating, the description of which appears to us rather obscure. The proceeding, however, appears worthy of trial, particularly, as no undue force is applied to the tumor, the disadvantage and danger of which cannot be too much insisted on.

*Monthly Jour. of Med. Science, July*, 1846, *p.* 68.

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119.—REDUCTION OF HERNIA, EN MASSE.— By Professor South.

[When this untoward event occurs, it has been proposed that the patien should stand upright, and cough, in order to force the sac down again; but this cannot be expected to occur, in consequence of the immediate narrowing of the opening by which the rupture-sac has passed into the abdomen.

Cloquet states that even in the dead subject, this opening contracts directly after the ascent of the rupture-sac, and, to a certain extent, prevents its reappearance externally. If this be so in the dead, it is still more probable that still greater contraction occurs in the living subject, and, consequently, the re-descent of the rupture-sac is still less likely to be effected. Some other remedy must, therefore be employed, "which, says Dupuytren, "consists in seeking for and drawing down the rupture by the opening through which it has passed into the belly, being assured that it will be found lying on the internal surface of that opening, where it can be laid hold of with the forceps, and drawn out, with or without cutting the edge of the ring."

Now, whether the swelling can be distinctly made out, or whether there be only sufficient presumption of a reduction in mass having been effected, the operation should be conducted with great caution, as it has more or less of an exploratory character. It consists in cutting into the cavity from which the rupture-sac is presumed to have been thrust up. Most commonly, in inguinal rupture, the sac, whether full or empty, is situated in front of the spermatic vessels, which it conceals; if, therefore, when the cremaster muscle be cut through lengthways, an empty space be found, behind which are the spermatic vessels, and into which the finger may be introduced and carried up into the belly through the rings and inguinal canal, and if this cavity be shreddy, and have not the shining and smooth appearance of the inner surface of the peritoneum, then it may be presumed the sac has been thrust up, and the cut must be carefully extended upwards till it can be reached, and then attempted to be brought down into the situation it had previously occupied. When this is done it must be freely opened, the stricture fully divided, and the gut returned. If, on the contrary, when the cavity cut into is found smooth and polished, there is little doubt that it is the rupture-sac undisturbed, and the explanation of the symptoms of

strangulation must be sought for in some other cause. But if, after cutting along the spermatic vessels, there be not any cavity, either shreddy or polished, if the finger cannot be passed into the belly, and if the spermatic vessels be found in their natural position and connection, then it may be presumed that there has not been any reduction, because there has been no sac to return. The part to be selected for examination and the extent of the cut, must depend upon the information obtained as to the extent to which the rupture is supposed to have reached; therefore it would be lengthways and lower in presumed scrotal rupture than when it has only been commonly protruded through the external ring, and still higher if it have not descended through the ring. When a femoral rupture is supposed to have been bodily returned, the character of the void, if any, and the capability of introducing the finger into the belly through its aperture, will show whether it be peritonal sac opened, or merely the space which it had previously occupied; and if the latter, the finger must be passed up towards the belly, and the sac, if reachable, brought down and opened. But if there be no cavity of any kind, then it may be presumed that there has been no rupture down, and the cause of the disorder looked for elsewhere.

If the warm bath, bleeding, and the taxis be unavailing, it is advisable that the strangulated bowel should, as speedlly as possible, be set free by a surgical operation. Other remedies have been proposed for use previously to operating, with the expectation of favouring the return of the bowel, but they are rarely efficient, and as delay is created by their employment, and no time can be spared when there is fair ground for believing that the operation will most likely be required, it is better not to make use of them.

I may observe that it is far from unfrequent to find patients labouring under strangulation drenched with purgative medicines, the greater part of which, if fluid, is rejected almost as soon as swallowed, and thus the vomiting rendered still more distressing. Occasionally the practitioner congratulates himself on finding that the stomach will retain calomel and colocynth, and hopes that the bowels may be relieved; an expectation, however, which will of necessity be disappointed, if it be the bowel that is strangulated. The celebrated Monro primus says that he has more than once reduced a rupture with a smart dose of calomel and jalap. No dependence, however, can be placed on medicine given by the mouth, and therefore its administration that way is useless. Mr. Pott, however, observes, "Though I cannot say I have seen frequent benefit from the exhibition of cathartics by the mouth, yet I have often experienced the good arising from acrid stimulating glysters, and suppositories frequently repeated, particularly from the smoke of tobacco, and from a composition of salt, honey, and aloes, boiled to the proper consistence of a suppository. By these I have seen very alarming ruptures returned, when they have been thought capable of being relieved by nothing but the chirurgical operation."

Such is Mr. Pott's opinion in regard to clysters, and it is reasonable to expect by exciting the action of the colon below the strictured part, more especially in those cases where part of that bowel is strangulated, that the gut may be drawn out of the sac, and thus reduction effected. The use of tobacco clysters, in the proportion of a drachm of the herb to a pint of water, infused for ten minutes, half of which was to be thrown up, and the other half after the lapse of half an hour, if the first did not produce effect, has been strongly urged by many surgeons, and especially by Sir Astley Cooper. It is, however, a very uncertain as well as unsafe remedy; the great difference in the strength of the tobacco renders it uncertain, as with the same quantity of the herb its active principle may vary considerably, so that it either acts violently or not at all: it is also unsafe, as one person will bear without inconvenience a quantity which will almost extinguish life in another, owing to peculiarity of constitution. I do not, therefore, employ this remedy, nor am I disposed to recommend it. The effect of a tobacco clyster is to produce squeamishness and great prostration of

strength, under which, certainly, attempts at a reduction are more hopeful. But the same effect is produced by a warm bath and bleeding more certainly and more safely.

Vomiting with tartar emetic has also been recommended, and I have seen one or two instances in which reduction has been effected whilst the patient has been suffering greatly from its depressing effects. But I should not employ it, for usually there is already vomiting sufficient, and the efforts made in that action are more likely to force down and increase the quantity of bowel thrust down than to favour its reduction, for it cannot very well be supposed that the bowel will be pulled out of the sac into the belly as the vomiting proceeds.

It must, however, be admitted that any or all of these remedies must be resorted to when the patient will not submit to an operation. In addition to these, cold applications have been made to the rupture-sac, to diminish the size of its contents by emptying its vessels of their blood, and by producing a sort of contraction in the skin, which shall gently constringe the sac and its contents. Monro primus was accustomed to apply cold claret for this purpose with success—a sad waste of good liquor, however, inasmuch as cold spring water would have been as efficient, if not more so—a good example of which is mentioned by Petit, who, having bled eight times a patient with strangulated rupture, and used other remedies without effecting reduction, was on the point of proceeding to operate, when the grandmother rushed in and prevented the operation, saying she would cure the boy in a minute. She then laid him naked on a coverlet upon the ground, and, having separated his thighs, she smartly and suddenly dashed a bucket full of water fresh from the well upon his scrotum and thighs, and the cremaster and dartos being immediately excited, contracted suddenly and completely, and returned the rupture.

Ice, coarsely bruised and mixed with salt, in such quantity as to half fill a bladder, and laid on the swelling so that it wraps round it, is, however, more commonly employed; and if ice cannot be procured readily, a freezing mixture of hydrochlorate of ammonia and nitrate of potash, five ounces of each to a pint of water, may be put in a bladder and applied as a very efficient substitute. It is necessary, however, in using great degrees of cold, that the swelling should be carefully watched, or the skin may be found frost-bitten and slough, which occurred to a patient whom the elder Mr. Cline attended with Mr. Sharp: the ice in this case was applied for thirty-six hours, at the expiration of which time the skin became absolutely frozen, extremely hard and discolored; when warmth was applied the redness and circulation were restored, and the contents of the sac returned with a gurgling noise. About ten days after the integuments sloughed off, but the patient did well.

Under favorable circumstances, after the reduction of a strangulated rupture, the symptoms generally subside; the vomiting ceases, the bowels, usually in a few hours, begin to act with or without the aid of medicine, and the patient is soon restored to health. But sometimes the peritoneum, and even the bowel, have become so inflamed that closely resembling symptoms still continue, and require corresponding treatment with calomel and opium, general bleeding, leeching and blistering the belly, or the application of large light poultices; occasionally, indeed, such cases may prove fatal. The strangulation also may have existed such time that the bowel may be unable to recover itself, even when returned into the belly; and the patient dies.

The rule, therefore, in all cases of strangulation is, after failure of reduction by the taxis, assisted with warm bath and bleeding, to advise the immediate performance of an operation, as the only mode of cure; and to impress upon the patient's mind, that if performed early, it is little dangerous and generally successful, but that the longer it is deferred the less likely is it to be successful, on account not only of the increasing injury

of the strangulated bowel, but the setting up, or spreading of peritoneal inflammation. *Med. Times, May* 16, 1846, *p.* 126.

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120.—A NEW TRUSS FOR INGUINAL HERNIA.—By DAVID TOD, Esq., London.

[In a communication to theLancet of July 4th, Mr. Tod gives a description of a new truss for inguinal hernia.]

The pad, which is about the size and shape of the point of a man's thumb, is made to press gently over the internal abdominal ring only, so as to allow the muscular fibres of the ring to retain their natural figure. The spring of the truss is made to ascend from the pad obliquely towards the spine of the ilium; then to form a curve round the skin covering the lumbar muscles above the crista ilii, and to terminate about half way between the umbilicus and the spine of the ilium of the opposite side, upon the anterior surface of the abdomen. The pressure of the truss is confined to the pad and distal end; but care is requisite in fitting these two extremities to the parts where the pressure must be made, otherwise the instrument will be of no use to the wearer.

As the bones of every person have a something peculiar to them, I make it a rule, when required to provide a truss, to take the size and shape of the pelvis correctly, then to fit the spring to the patient, and after adjusting it to the body, to harden the steel in oil and cover it with leather. No wool or cotton should be used in covering the steel spring of a truss, for these substances generate heat and produce pain. Neither should the pad contain anything but a piece of soft elastic cork, about half an inch in thickness, and covered with wash-leather; and to prevent any galvanic action from annoying the wearer, only one kind of metal should be used in the construction of the instrument. When the truss is in use, none of the actions of the abdominal muscles should be interrupted, for very little pressure of the pad is required to retain the intestine within the abdomen. In proof of this, I need only refer to the effect produced by the point of a finger when pressing gently over the internal abdominal ring. When a truss fits a patient properly, it never shifts out of its position, nor gives the least trouble to the wearer. *Lancet, July* 4, 1846, *p.* 10.

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121.—AN EARLY RESORT TO A SURGICAL OPERATION IN STRANGULATED HERNIA.—By DR. WARREN.

[From the Medical Gazette of August 7th, 1846, we extract some admirable remarks, by Dr. Warren, on the necessity of an early operation in cases of strangulated hernia. It has been argued by some, that the taxis in many cases will, after repeated and diligent trials, succeed, and of course, is not followed by the bad consequences of herniotomy; but we have no doubt that a greater number of lives would be saved by an early resort to the operation. Dr. Warren observes:]

The common advice is to employ pressure, and afterwards a certain routine of applications, viz., bleeding, the warm-bath, cold to the part, injections of tobacco, with perhaps other remedies, as opium, belladonna, &c., and if these fail, then to operate. In the meanwhile the patient continues in great distress, with an inflammation gradually increasing, and threatening to become unmanageable and fatal. A discussion of the utility of these and other modes of effecting the reduction would extend this paper to too great a length; I will only, therefore, briefly state the results of my experience in regard to them. First, pressure, actively and judiciously employed for a short time, is proper and indispensable; if long continued, either by the hand, bandage, bags of air, water or mercury, it is calculated rather to increase the inflammation than to reduce the hernia. Second,

bleeding, as above stated, may be carried to a considerable extent under the eye of a judicious and experienced practitioner. Third, the warm bath may be resorted to in mild cases, but in bad strangulations it is useless, and sometimes seems to increase the tension of the abdomen. Fourth, cold to the part may be employed for a short time in the early stage of the affection; when long continued it may produce gangrene, as I have myself experienced. Fifth, the injection of tobacco is an uncertain and dangerous application, wholly inefficacious when the strength of the infusion is weak, and dangerous when it is strong. Sixth, large doses of opium I have known to be useful, giving the patient temporary relief, and afterwards causing muscular relaxation favourable to the reduction of the hernia. Purgative medicines are almost always pernicious. The local application of belladonna, as practised in Germany, appears to me to be a trifling with the life of the patient. It would not be proper, for reasons already hinted at, to consider in this place other modes of treating strangulated hernia; as, for example, the attempt to remove the stricture by dilatation without cutting. This proposal, made by a distinguished English physician, seems to me rather extraordinary; in nearly every case of strangulated hernia which I have seen and known of, there has been barely room to introduce a small instrument, such as a director, or a narrow-bladed knife. The attempt to introduce and employ dilators, of sufficient strength to distend the fibrous apparatus of the abdominal and crural rings, would, I humbly conceive, be nugatory, if not dangerous.

It would seem, from the recent reports of the Parisian hospitals, that the operation is usually too long delayed, being deferred for two or three days. (See the Reports of the Practice in Hotel-Dieu. Paris Med. Gaz., vol. x.) This matter is the more worthy of discussion, for we look to these hospitals as authority not to be excelled, on the subject of surgical operations. From data collected by M. Malgaigne, it appears that the number of cases of strangulated hernia operated upon, in the hospitals of Paris, from January 1st, 1836, to December 31st, 1840, were 220, and of these 133 died. (Vide Gaz. Med. de Paris, tom. x., p. 450.) Also from the surgical records of the Hotel Dieu, as given in the same volume of the work already referred to, on page 355, it appears, that the number of cases of strangulated hernia admitted to this hospital during the year 1841, were, of crural hernia 6, of inguinal 3. The deaths of those operated on were 5; one death occurred in a patient not operated on. Allowing, then, that this one case was of too long standing to permit an operation at the time of its admission to the hospital, we still have five deaths in eight operations. The result in our practice, as already stated, has been very different; it being a rare occurrence for us to lose a patient after the operation for strangulated hernia, if called to him in the first period of the attack. Possibly these cases alluded to as received into the Parisian hospitals may have been generally strangulated for some days prior to their admission.

Another remark which may be made in this connection is, that if the operation be long delayed, the parts swell, and thus increase the difficulty of the reduction. In fact, the surgeon should bear in mind, when he employs taxis, the difficulty which may arise, if he is compelled to resort to the operation, from the swelled state of the hernial contents, and their increased sensibility, in consequence of pressure too long continued.

For these reasons, we cannot too strongly recommend an early resort to the operation in cases of bad strangulation; those where the pain, tenderness, and firmness of the tumor are great, and where a constitutional affection distinctly exists. In such, after a scientific and cautious use of pressure, I should advise the following course—that general bleeding be immediately employed, and continued until the patient is made faint. This course will bring on that faintness, which produces the highest degree of relaxation, as well as exert another most important effect in preventing or diminishing inflammation in the affected part. In this state the hernia may

usually be reduced, if reducible without an operation. The employment of the warm-bath, of cold to the part, of tobacco, &c., is inferior in efficacy to copious bleeding; they exhaust a precious period of time, and the strength of the patient. But in cases of strangulation not attended with severe pain, or other local and constitutional disturbance, the operation should not be too hastily resorted to.

With regard to the seat of the stricture, the question has been agitated in the French schools, whether strangulation ever exists in the external abdominal ring, and whether it is not always situated in the neck of the hernial sac. In most of the cases of inguinal hernia, which we have had occasion to see, the strangulation was in the external abdominal ring, and the division of this part relieved the stricture, and allowed the hernia to be returned without any interference from the neck of the sac. None of the cases here described go to show that the stricture was in the mouth of the sac. I have, however, operated on cases where the stricture was at the upper ring, and some of these might, no doubt, be cases where the stricture was produced by the neck of the sac; but they are comparatively rare.

Another doctrine has been maintained by high authority, which teaches, that a considerable proportion of cases of supposed strangulated hernia are cases of inflammation of the hernial sac. The history of the instances falling within our experience does not afford any support to this doctrine; and the appearance of the hernial contents in those operated upon proves that they were inflamed from interruption to their circulation. In case fourth, for example, the intestine below the stricture was nearly black, but when an additional portion was drawn from the cavity of the abdomen, for the purpose of disengaging it from the stricture, the part thus drawn out was not discolored. None of the cases reported in this article support this doctrine of peritoneal inflammation, and although such cases may sometimes present themselves, their occurrence is, we believe, exceedingly rare.

The practicability and utility in some instances of dividing the stricture, without opening the hernial sac, have been established by the experience of various eminent surgeons. We have here mentioned two cases, the first and third, in which this practice was employed with perfect success; in the case of crural hernia in the male, it was attempted, but could not be executed. On the whole, we think that this method of operating should be tried more frequently than it has been heretofore; we may even say that it should be generally attempted. In cases where there was reason to suspect gangrene of the hernial contents, it would be improper; in such it would be proper to open the sac, and give the gangrenous part an opportunity of separating. In cases where the stricture was in the neck of the sac, whether at the lower ring or the upper, this operation would be inapplicable, but such cases, we apprehend, are not very frequent.

The last point which remains to be noticed is, the possibility of conducting the treatment, subsequent to the operation, so as to give the patient some security against the return of the rupture after his recovery. In this case the patient wore a bandage for a few days; after the adhesion of the wound, it was discontinued. When he arose from his bed, afterwards, while he walked about the wards, and when he quitted the hospital, he had neither truss nor bandage, nor was there any appearance of the descent of the intestine. The plan to be recommended to gain the desired end is the following: In bringing the wound together after the operation, introduce the needle for making the suture, at the distance of one inch from the edge of the wound on one side, and bring it out at the distance of one inch from the edge on the opposite side. This suture will include two inches of skin; the thread should be tied so as to gather up this skin over the abdominal ring. Two such sutures should be employed, at the distance of little more than an inch from each other. In this way a natural pad will be formed, which will adhere to the aperture of the ring, and which may be sufficient to prevent the subsequent descent of the hernia. *Med. Gaz., Aug.* 7, 1846, *p.* 240.

122.—TREATMENT OF HÆMORRHOIDS.—By M. Amussat, Paris.

[The author observes, that, reflecting on the number of accidents which have occurred after the operation by excision for the cure of internal hæmorrhoids, he determined to try ligature, but the mode of application proving inconvenient, and the "solidified caustic of Vienna" having been discovered, he determined to make a trial of it. He says,]

For a long time I employed exclusively the ligature, and of a great number of operations performed by me not one terminated fatally, though I observed some inconvenience to result from that method of treatment. In 1842, the discovery of the solidified caustic of Vienna, suggested to me the idea of recurring to cauterization in order to avoid the nervous accidents which sometimes take place in consequence of the constriction produced by the ligature, and likewise to simplify an operation, the necessity of which is so often felt. During several years cauterization was performed on a great number of patients with the caustic of M. Filhos, *i. e.*, with a cylinder composed of potassa and lime solidified; and the effects of this operation were much more simple than those of the operation by ligature.

In the month of April, 1844, my son, Alphonse Amussat, thought that cauterization of the hæmorrhoid en masse might be advantageously replaced by the circular cauterization of its pedicle. To attain this end he had made, by M. Charrière, various porte-caustic forceps. Those which I prefer are nothing more than dressing forceps, whose extremities form two little cylinders of about four centimetres in length, and two or three millimetres in diameter, upon each of which has been cut, parallel to its axis, a deep groove intended to receive the caustic of Dr. Filhos, or a paste made of the same caustic pulverised and a little alcohol. The following is an account of a case operated upon by this method, and contains the details of the operation.

[The patient, ætat 60, of good constitution, had enjoyed excellent health until 1840, when he had for the first time, a discharge of blood per anum. Frequent recurrences of this appeared, especially after the fatiguing labour which his position required him to undergo. The patient thought he had a prolapsus, and applied a bandage with a pad, which very much embarrassed him. The pain and inconvenience which his disease caused him, determined him to consult Dr. Pouget, who advised a consultation with M. Amussat, and on the 14th of July, it was determined to remove two hæmorrhoidal tumors; these, and not a prolapsus (as the patient had imagined), being the sole cause of the pain which he suffered, and, being prepared for the operation, by taking a mild cathartic and subjecting himself to a strict dietary, it was performed on the 16th of July, 1845.]

The patient after returning an enema which he had just taken, made strong expulsatory efforts as if to go to stool; two internal hemorrhoidal tumors could then be seen of the size and form of a large bean, situated upon the lateral portion of the rectum, at a short distance from the anal orifice, likewise two external ridges corresponding to the internal hemorrhoids. The patient having placed himself on the right side, I seized the left hemorrhoid, the larger of the two, with my porte-caustic forceps, and held it in this manner during a minute and a half. I then opened it with scissors in the direction of its length to empty it of the little blood which it contained, and still holding it with the forceps, cauterized its interior with a cylinder of Filhos caustic. At the expiration of half a minute more the operation was finished. Injections were made in order to remove the particles of caustic which adhered to the surrounding parts, and the patient got immediately into a hip bath which had been prepared beforehand.

The patient remained several hours in the bath without experiencing any sharp pain and without having the least feverish excitement; he passed a good night, and the next day felt but very slight pain. The cauterized hemorrhoid was flat, blackish, like a true eschar, and the laminæ resulting from the incision were perfectly distinct. Strict diet and a slightly as-

tringent drink were prescribed in order to avoid stools which might have caused the hemorrhoid to fill before the time necessary for its elimination should have elapsed. The following days the patient was subjected to the same regimen, viz., frequent hip-baths, injections, and cataplasms, with no other nourishment than a little broth. The seventh day the hemorrhoid came away in pieces after a moderate stool, and without causing the patient any suffering. The eighth day he felt very well. In place of the destroyed hemorrhoid was seen a little linear cicatrix about three millimetres in length, surrounded by a small reddish areola, with a slight suppuration. The other hemorrhoid seemed to have diminished in size, and its surface was slightly inflamed.

During the seven days preceding the fall of the cauterized hemorrhoid the patient had several stools, small in quantity, and almost liquid, provoked by injections, but the process of elimination was in no wise altered by them. In the course of the treatment, having several times complained of a painful point near the left external projection, I made with a lancet a slight incision, which gave issue to a red granular matter, the escape of which gave the patient relief. Some days after I destroyed the second hemorrhoid by the same method, with the omission, however, of the longitudinal incision, which omission renders the process of elimination a little more painful. About the middle of the month of August the patient was entirely cured.

[We are indebted to Dr. Henry Selden, of Norfolk, Va. through whom M. Amussat transmitted to us this very interesting paper for publication, for the translation of it here given.—Editor of the American Journal.]

*American Jour. of Med. Science, April*, 1846, *p.* 346.

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123.—FISSURES OF THE ANUS, WITH A CONDYLOMA.—By Dr. Hargrave, of Dublin.

[The patient was admitted into the City of Dublin Hospital, May 23rd, 1846, and complained of intense pain on having a motion, which continued for some time afterwards, and was so violent that she dreaded the call.]

On examination of the anus, the orifice presented itself as the deeply depressed centre of a large and regularly defined circular condyloma, fully of the size of a crown piece. Into it from the anal opening six radii extended to its circumference, presenting so many fissures; of these, two lateral, and one at the anterior part of the verge of the anus, were the deepest, especially the last, which crept and passed upwards into the intestines. She could scarcely endure the introduction of the finger into the rectum. She states that she never suffered from syphilis. To all the fissures the solid nitrate of silver was freely applied, also lightly to the condyloma, and then dressed with dry lint and a T bandage. To have an emollient enema to-morrow morning.

30th. Judging from her statements, the nitrate of silver produced almost unprecedented pain, which continued for some hours, though the usual application had been used to allay any distress that might arise from it. She confesses herself much benefitted from it, as she experienced but little distress this morning from the action of the enema. The state of the fissures much improved, suffering distress from none but the deep one at the anterior part of the anus, and one on the left side.

June 1st. Finds herself better, but complains of debility.

℞. inf. quassiæ, ℥iv.; aquæ lauro cerasi, ℥i.; aquæ calcis, ℥ij. M. sumat. ℥i. ter in die.

The nitrate of silver again applied to the remaining fissures.

From this date till the 17th, the nitrate of silver was used simply for the fissure at the anterior part of the anus. The bowels relieved by occasional doses of castor oil and the emollient oleaginous enema.

On the 19th, she was discharged the hospital, well; no inconvenience from the fissure; the condyloma also cured.

*Observations.*—From the severity of suffering that this patient experienced, I was much disposed to the opinion that no permanent relief would be obtained from any treatment but the actual division of the sphincter by operation, particularly as the anterior one extended into the rectum. To avoid, if possible, the use of the knife—which should be the rule both in public and private practice with the well-educated and scientific surgeon—I determined to observe the effects of the free and decided application of the argent. nit. which on this occasion answered in the most satisfactory and efficient manner.

In the Arch. Gen. for April of the current year, is a memoir on the submucous myotomy of the sphincter ani for the relief of its spasmodic action and contraction, as the means of cure for the exciting causes of this very distressing malady. It is a simple operation, and is performed as follows:—The bowel being previously cleared out by an enema, a small puncture is then to be made in the skin at the distance of from eight to ten lines from the anus, or from two to three centimetres. The index finger is next to be introduced into the rectum, so as to keep the mucous membrane tense, the skin at the same time being stretched on either side by an assistant. The tenotome is then carefully to be passed between the mucous membrane and the sphincter, and the muscle divided to the requisite extent. As soon as the section of it is made, the finger in the rectum feels the solution of continuity between the divided portions of the muscle, which is preceded by a peculiar noise—"une espece de craquement."

This is a very ingenious operation, and one which will answer in many cases, but must be, as all operations, limited to their proper range of selection. A case is given in the above memoir of a double submucous section of the sphincter muscle, which afforded a complete and permanent cure. The after-dressings consist either of lint covered with simple cerate, or lint wetted with cold water. *Dublin Med. Press, Sept.* 2, 1846, *p.* 149.

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124.—FISSURE OF THE ANUS IN INFANTS.—By M. Duclos.

[It appears from the experience of several French surgeons, that this is a disease to which infants are particularly liable. This is somewhat at variance with the generally received opinion of the profession. M. Duclos mentions the case of a child, a year old, who had labored under constipation nearly from its birth. The bowels were only moved every third or fourth day, and defecation was attended with excessive pain, straining, and often with the loss of blood; this, however, always came away either before or after the fæces—never mixed with the stools. The general health was pretty good. M. Duclos says:]

On examining the anus the following was found to be the state of parts:—The circumference of the anus was perfectly healthy, but on deeply separating the folds at the anterior part and between two folds of skin, a fissure, a millimetre in width, and about five millimetres in length, of a red color, was distinctly perceived. It was the more clearly seen, as the child, screaming violently, protruded the anus. The constriction of the anus was so great, that the extremity of the little finger could scarcely be introduced. M. Trousseau prescribed an enema, composed of extract of rhatany, one scruple; water, three ounces. The child kept the injection for five minutes, and returned it along with soft fæces. The injection was repeated daily for five days. Each time the passage of the fæces appeared less painful, and on the sixth day the injection was discontinued. The motions were then easy, free from blood or pus, and unaccompanied by pain. The child left the hospital ten days after, quite cured of the anal affection.

The second case occurred, in M. Trousseau's private practice. The child, eight months of age, well developed, and in previous good health, had been suckled by the mother until the age of six months and a half. At that epoch it was weaned, and was subsequently attacked with violent diarrhœa, which gave way under the use of emollients. The diarrhœa was followed by obstinate constipation. This state had existed for about eight days, when the child was seized, during defecation, by violent pain at the anus, and the fæces were found tinged with blood. From that time the child suffered great pain on defecation, and for some minutes afterwards. The fæces were hard, and generally tinged with a few drops of blood. The child was constipated. General state satisfactory. On examining the anus, around its orifice there were found a little erythema and eczema, which had been occasioned by the diarrhœa, and were fast dying away. Behind, and to the left, on separating the folds of the anus, a fissure about two millimetres in length and one in depth, of a rosy color, was discovered. It was very distinctly seen on the child's protruding the anus in an effort for defecation. The anus was considerably constricted. The same treatment was adopted as in the former case, and with equal success. The fissure cicatrized completely in about ten days, all pain on the evacuation of the fæces disappearing. *Lancet, May* 9, 1846, *p.* 521.

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## ORGANS OF URINE AND GENERATION.

125.—LITHOTRITY AND LITHOTOMY.—By R. Liston, Esq., F.R.S., &c.

Mr. Liston is one of the few surgeons in this country who have taken much pains to acquaint themselves with the performance and advantages of lithotrity, and his evidence in its favour is of the more importance, inasmuch as the nearly uniform success which has attended his lithotomy operations might have prejudiced him against other procedures. He says:

"Until very lately, patients applying to surgeons were constantly recommended to submit to the knife, in order to get rid of stone in the bladder, whatever might be the size of the concretion, or the state of the urinary organs. On the other hand, if he fell into the hands of the professed grinder, no matter what the peculiarities of his case, he was as certain to be subjected to the boring or hammering processes. Now, that the merits of both operations are better understood and appreciated—some few surgeons having thought proper to turn their attention to the matter, and study and understand lithotrity as well as lithotomy—patients have a chance of being treated judiciously and conscientiously, and of having that proceeding resorted to which is adapted to their respective cases. I was not slow to adopt the operation of crushing, have always had a favorable impression of it, and have throughout used the same language regarding it, yet I have the credit of being an opponent to lithotrity. I have all along been, and am certainly still, opposed to the abuse of any one operation, by its indiscriminate employment in all cases, and by its being practised by those alone who know no other. It can be employed safely only by those who understand well the healthy anatomy of the urethra and bladder; who are acquainted with their sympathies, vital actions, and pathological changes; and who both understand, and are in the constant habit of treating derangements of their functions. The operation of lithotrity is applicable to patients above the age of puberty, when the symptoms have not endured very long; when the foreign body is ascertained to measure six or seven lines, or even more, perhaps, say as large as a chesnut—when the bladder and urethra are in a tolerably healthy and normal condition—as indicated by the power to retain the urine comfortably for several hours, and to pass it in a tolerably free stream; and when the viscus admits of injection and a careful exploration.

The operation of lithotomy must yet continue to be performed on children, and on those of mature age who are so ill-formed or foolish as to

permit the stone to attain an inordinate bulk. The concretions in young subjects are generally composed of a very dense substance, the oxalate of lime, in whole or in part; and the urethra is often so narrow, as to preclude the application of instruments strong enough to reduce them to fragments. The reasons for giving a preference to incision over crushing, when the stone is large, have been already given.

This favorable opinion of lithotrity was published in 1840; since when it has been confirmed and much strengthened by ample experience. Of late years, in point of fact, I have scarcely been obliged to have recourse to lithotomy at all in private practice. At the hospital, patients yet present themselves with large stones and bad bladders. Then lithotomy is both a less painful and much more safe operation, as already propounded. During the above period, twenty-four patients have been cut, and all have recovered without accident; these patients have been of all ages, from two to eighty years of age, and some of them not over-favourable subjects. So that, after all, there is not much to find fault with as regards this cruel and bloody 'operation,' when carefully set about."

It is satisfactory to know that Mr. Liston's great success as a lithotomist, has been obtained by the use of the simplest apparatus, his incisions being commenced and completed by the same straight knife. He makes his external incision very free, but the internal one is very limited. "It should certainly not extend beyond six or seven lines from the urethra outwards and downwards," which in all ordinary cases will allow the requisite dilatation to be safely made. "The object in following this method, is to avoid all interference with the reflexion of the ileo-vesical fascia from the sides of the pelvic cavity over the base of the prostate gland and side of the bladder. If this natural boundary betwixt the external and internal cellular tissue is broken up, there is scarcely a possibility of preventing infiltration of urine, which must almost certainly prove fatal." An opening of this extent, owing to the elastic and yielding character of the parts, will readily admit the finger, and allow of the extraction of a stone of considerable dimensions. In cases in which, from the corpulence or unmanageableness of the patient, or the size and rigidity of the prostate, the inner opening is executed with difficulty, the blunt gorget may be employed for enlarging the opening into the bladder, but Mr. Liston has never had occasion to use it. The exact position of the stone must be carefully ascertained before using the forceps, and its favourable adjustment within these carefully adjusted by the finger. The use of the forceps is, in fact, the most difficult part of the operation; "and it is equally the duty of the pupil to practise the seizing and extraction of the stone, as it is for him to study the relative anatomy, so that he may be enabled to cut into the bladder with precision and safety,"—an important piece of advice which is much needed, as students invariably occupy themselves with the cutting part of the operation alone. If the surgeon finds upon examination with his finger that the stone is a very large one, he must convert his operation into a bilateral one before attempting to remove it. If his external incision has been sufficiently free and low enough in the perineum, it will require no enlargement, and he has only to pass a narrow-bladed, blunt-pointed bistoury along the finger, and make a similar incision on the opposite side of the neck of the bladder, directing the edge of the knife towards the right tuberosity of the ischium. In nineteen cases out of twenty, the single lateral incision suffices. When the incisions are placed low, and the deeper ones performed cautiously, there is no danger of hæmorrhage; and of considerably more than one hundred operations performed by Mr. Liston, only one old man suffered from hæmorrhage, and that because the diseased condition of the branches of the hæmorrhoidals prevented their contracting when divided. Mr. Liston attributes much of the success of his operations to his practice of introducing through the track of the wound, and securing in the bladder, a gum-elastic tube, which, by facilitating the flow of urine, much lessens the dan-

ger of infiltration and its dreadful consequences, and affords an easy means of suppressing any excess of arterial or venous oozing. It need not be retained in children for more than twenty hours, but in old persons of lax fibre, it should be kept in for forty or fifty hours at least.

*Medico-Chirurgical Review, Oct.* 1846, *p.* 425.

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126.—NEW INSTRUMENT OF LITHOTRITY.

Dr. Arthault has invented a new instrument for crushing calculi in the bladder. An experiment was lately made on a subject at the Hospital Beaujon, in the presence of several surgeons. A calculus of the size of a pigeon's egg was introduced into the bladder, and a suture applied so as to close the cavity. The calculus was reduced to an impalpable powder in three minutes. Dr. Arthault's instrument thus not merely breaks or crushes, but completely pulverizes the calculus.—*Gaz. Med. Chir.*

*Med. Gaz., May* 8, 1846, *p.* 843.

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127.—LITHOTOMY IN THE FEMALE.—By W. Fergusson, Esq., Surgeon to King's College Hospital, &c.

[This case was admitted into King's College Hospital, under the care of Mr. Fergusson, Oct. 8th, 1845. The stone was ascertained to be present, and was operated upon on the 11th.]

The patient was placed on the table, and tied in the usual way for lithotomy; a deeply-grooved straight director was introduced into the bladder, the groove pointing downwards, and to the left side; a straight, probe-pointed bistoury was then passed along it, and an incision about half an inch in extent was made towards the tuberosity of the ischium, the wound being limited to the anterior half of the urethra. A slight nick was next made in the right side of the orifice of the urethra, and the director being withdrawn, the point of the left forefinger was introduced into the wound, and then gradually insinuated into the bladder, at the same time dilating the posterior half of the urethra. The finger having touched the stone, was then withdrawn; a small lithotomy forceps was now introduced, when the stone was immediately seized, and, though the blades slipped once, was speedily removed. It was of an oval form, about the size of a pigeon's egg, and composed chiefly of lithic acid. Seven, p. m. Patient comfortable, and in good spirits. Water passes freely, and without much pain.

[Everything went on favourably, and she was discharged cured on the 31st.]

Mr. Fergusson called attention to the peculiar operation which had been performed in this instance, differing, as he stated, in some important respects, from the operations usually resorted to in the female. There had been here, as in most other instances, a choice of means of cure. As to lithotrity, he did not think it eligible in this case, chiefly, perhaps, on account of the timidity of the patient, and her consequent restlessness when touched by the surgeons. For the same reasons, dilatation did not appear practicable; and he had therefore to adopt a proceeding whereby he could at once remove the stone while the patient was held steady by main force. The operation which he had performed was of a compound character, the opening necessary for the extraction of the stone having been made partly by incision and partly by dilatation. He had described this operation ever since he had been a teacher, and was disposed to think it the best mode of relieving a female from stone of all with which he was acquainted. In the process of dilatation, he had remarked, both on the living and the dead body, how slowly the external orifice of the urethra dilated, and how much pain it caused; indeed, the tissues in this part seemed incapable of dilating to

any extent likely to permit the passage of a large stone, unless the force were very gradually applied. Towards the back part of the passage, however, and at the neck of the bladder, the strictures yielded more readily, and they seemed also to regain their tone with much more facility. It was an error to suppose that dilatation, in whatever way performed, invariably saved the patient from dribbling of urine ever after. Very recently, a case proving the reverse had been under notice in the hospital. A girl nine years of age, had a stone extracted, some years before, by dilatation; but she never since had power over the stream of urine. In lithotomy, as usually performed, there was even a greater risk of this unhappy consequence; and although, in either method, especially by dilatation, many cases were familiar to the profession when no such results had ensued, it was yet felt by most practical men that there was great uncertainty as to what might follow any of the usual proceedings in such cases.

After describing the various operations which had been proposed for lithotomy in the female, Mr. Fergusson stated his conviction, that while there was less positive danger in the proceeding which he had followed in this instance, than in some of the others described in ordinary surgical works, there was, perhaps, greater chance of the parts regaining tone sufficient to give command at will over the stream of urine. The incision in the anterior part of the urethra produced, in his opinion, less injury than dilatation, while, by not applying the knife to the back part of the passage, or to the neck of the bladder, there was positively less risk of severe and dangerous inflammation, while the muscular structures at the neck of the bladder, in the viscus itself, which doubtless gave the power of retaining the water, more speedily regained their natural condition, than after division with the knife. The little notch which he had made on the other side of the urethra might or might not be made, according to circumstances. Here the stone seemed so large in proportion to the parts, that he had thought it advisable; but with a smaller stone, he should extract without it. It would be unreasonable to conclude, from this single case, that this operation was the best that could be performed; possibly the same happy results might, in this instance, have followed any other proceeding; but it appeared to him that there was so much good in this operation, and apparently so little evil, that it was well worthy of further trial.

*Lancet, Sept.* 12, 1846, *p.* 289.

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128.—LITHOTOMY IN A FEMALE.—By Dr. Baker, New York.

[Dr. Baker had a patient, a female, with stone in the bladder, in whom the urethra was in so irritable a condition as to prevent dilatation. He resolved to perform the operation by cutting, and thus proceeded.]

The patient was placed on the table and secured in the common way. A straight grooved staff was introduced through the urethra, and the stone felt with the beak of the instrument. An opening was now made by dividing the uretha half an inch posterior to the meatus urinarius with a sharp pointed bistoury, into the groove of the staff. The beak or probe-point of the lithotome knife was introduced through the opening thus made in the urethra into the groove of the staff, and pushed forward along the groove, in a direction obliquely outward and downward, until it penetrated the bladder, and the incision continued until of sufficient size to admit the forceps. The knife was now withdrawn, and the forceps introduced. A stone about the size of a nutmeg was drawn out. The search was resumed, and another stone secured and removed, and so on to the number of ten, varying very little in size. No more stones being found, the bladder was washed out with warm milk and water, and the patient put to bed. She bore the operation well, and expressed herself as being freer from pain than she had been in six months. She could now lie in any position. The walls of the

neck of the bladder were much thickened, probably the result of the long-continued irritation from the friction of the stones.

The satisfactory result of this case is to be attributed to the mode of performing the operation—namely, to leaving the meatus and anterior portion of the urethra undivided. Where dilatation of the urethra is practicable, it should undoubtedly be chosen as the simpler method, but even in this, incontinence of urine is a frequent consequence. Unfortunately, however, in the majority of cases, especially those of long standing, there is so much irritability of the parts as entirely to preclude the success of this operation. Such was the fact with the case under consideration. It is well known to the profession, that the common operation of lithotomy in the female—namely, of dividing the urethra its entire length, is almost invariably followed by incontinence. Such at least appears to have been the experience of Sir Astley Cooper, both in his own operations, and those he witnessed in others. He says, "In all the cases of this operation that I have seen performed or witnessed, the urine has not afterwards been retained, but I would not deny that a patient might recover the retentive power. As the loss of retention is a greater evil than I can describe, producing excoriation and a very offensive state, I shall, in any future operation of lithotomy, try what may be effected by employing a suture to bring the divided parts together."

The advantage of leaving the commencement of the urethra uncut, will be apparent, and needs no particular explanation. It at least acts the part of Sir Astley's proposed suture, without the risk of its irritating or being torn out, not to speak of the pain and difficulty of its application. The only precaution I consider necessary to secure success, in addition to the common position and care, is the continued use of the catheter, to prevent the urine flowing through the wound. The two extremities of the wound being secured by natural structure, and the wound being kept free from urine by the use of the catheter, there is nothing to prevent its rapidly and permanently healing, as in other parts. This operation, so far as I know, was originated by Dr. Mitchell. *Lancet, May* 30, 1846, *p.* 604.

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129.—VALUE OF INSTRUMENTS IN DETECTING CALCULUS.—By M. CIVIALE.

From the moment my opinion is formed on the aptitude of the organs to admit of the use of the sound, and to bear it for a sufficient length of time, I at once commence its employment. The method varies according to the object in view. If I wish to satisfy myself of the existence of a calculus, attended or not with organic lesions, the plan differs as the bladder is capacious or otherwise. In the latter case, if the viscus contracts energetically; if it contains only a small quantity of urine at the time the sound is introduced; if the liquid is forced out; our first endeavor should be, to prevent it passing away, either by means of the finger, or other means. We must proceed to sound the patient in the ordinary way; but besides this, it will be necessary to rotate the sound, by which movement the point of the instrument will be turned towards the rectum. The point must be turned towards all sides of the lower part of the bladder, which, as is well known, is less deep, and in some cases of enlargement of the prostate, represents a sort of cul de sac. But, at the same time, care must be taken that the point of the sound does not rub painfully against the surface of the bladder, by the surgeon lowering the hand which presses on the handle, so that the viscus should have less size, and the curved portion of the instrument be as long as possible.

By means of this manœuvre, we are enabled, with sounds having a slight curve, to execute without pain, and with all desirable precision, an exploration of the bladder, which cannot be done in the usual way, or in so satis-

factory a manner, by other means. Another modification, which is even more important, inasmuch as we find it very often applicable, consists in injecting the bladder several times successively with lukewarm water, when the bladder contracts with energy; or with cold water under opposite circumstances. In this way we are enabled to let the bladder pass from a state of repletion to that of emptiness, several times successively, so as to vary its form and capacity; almost always the organ momentarily becomes contracted to such an extent, that not only the surface to be explored is much diminished in size, but the walls of the bladder collapse on the instrument, so that the stone, if the bladder contains one, is readily felt.

In simple cases it is rare for the surgeon not to discover a calculus, however small it may be. But in cases where the bladder presents columns, enlargements of the prostate, or swelling in the neighbourhood of the neck, one essay will be insufficient; nor must we depend upon the sound alone. For instance, when a prostatic tumor, or fungus, exists on the inferior surface of the neck of the bladder, the sound may depress the swelling, or thrust it back, so as to conceal any small stone lodged behind this duplicature. Moreover, it is often difficult to discover a foreign body in this situation, either by catheterism, or by other means, of which Delpech and others have given examples. I have succeeded, in many instances, by employing a sound with a short point, and bent very much, and by turning the point downwards behind the tumor, and by moving it laterally. If any doubts exist, they may be cleared up by means of the lithoclaste, which should be preferred to the trilabe; whereas, we should have recourse to the last, if, notwithstanding repeated injections of cold water, the bladder does not contract, but presents so large a size that the sound is unable to explore it to a sufficient extent.

*Lancet, Aug.* 8, 1846, *p.* 157.

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### 130.—CALCULI OF THE PROSTATE GLAND.

A discussion which occurred recently at the "Societé de Chirurgie," on prostatic calculi, and which is reported by the Gazette de Hôpitaux, elicited the following remarks on the subject:

M. Lenoir stated that a patient, fifty-five years of age, had been addressed to him by a provincial surgeon, under the impression that he was labouring under vesical calculus. On introducing the sound, he found an obstacle which gave a clear sound, and which he thought was a vesical calculus, but on examining digitally by the rectum, he failed to recognise its presence. On exercising pressure, however, on the prostate, he caused the escape of about fifteen small calculi. They were of a dark-yellow colour, and presented facet surfaces; burnt, they gave a decided animal odour. The patient who, when he entered the hospital, had all the symptoms of serious vesical catarrh, left nearly well. A few months later, he was again sent to Paris, under the idea that he was labouring from vesical calculus, and a number of small stones were again emitted, by pressure of the prostate. Vesical catarrh was present, as on the first occasion. M. Lenoir thought that the calculi were formed in the ejaculatory ducts, and that it was because they occupied the orifice, that these produced, when touched with the sound, the sensation of a stone in the bladder.

M. Nelaton had met with a case at the Hotel Dieu, similar to the one of M. Lenoir. The friction of the sound over a hard substance in the region of the prostate had led him to recognise the presence of prostatic calculi. He managed to withdraw several by means of lithotritic instruments, and the patient left apparently cured. Two months afterwards he returned with the same symptoms, indicating prostatic calculi, and, in addition, with a vesical calculus. He was not able to lay hold of the latter, in order to crush it, and was obliged to perform the operation of lithotomy. On scratching the surface of the incised prostate with his nail, he managed to make several cal-

culi fall, similar to those described by M. Lenoir. The patient was cured. M. Michon, M. Guersent, and M. Laugier, thought that prostatic calculi were not rare; M. Malgaigne was of a contrary opinion.

*Lancet, May* 9, 1846, *p.* 521.

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131.—ECTROTIC OR ABORTIVE TREATMENT OF GONORRHŒA.—By C. D. Arnott, M. D., &c.

[The efficacy of nitrate of silver, both in simple and specific inflammation, is sufficiently proved, as in erythema and simple cases of paronchia, the stings of wasps, bees, gnats, &c.; also the bites of rabid animals. In addition to its sedative quality, it appears to decompose or neutralize the poison, or arrest the zymosis, by which the poison is multiplied in the system. Its use in the early stages of gonorrhœa will be found useful. Dr. Arnott observes:]

The mode of employing the remedy is simple. An injection, composed of twelve grains of the salt to the ounce of water, is the proper strength to use. About a couple of drachms of this, by means of an ivory (or, for obvious chemical reasons, what is better, a glass) syringe, is to be thrown into the urethra, the penis being at the same time elevated and compressed at about two inches from the orifice, thus insuring complete application of the solution to the urethral membrane within this range, and no further. The nozzle of the syringe being withdrawn, the orifice of the urethra is to be occluded, and the solution kept in contact with the mucous membrane for the space of not less than half a minute. No urine is to be passed for half an hour after the injection, and the penis is to be kept suspended. The immediate visible effect of the remedy is to form a coagulated film on the surface of the urethral lining, and this, undoubtedly, is a main agent in effecting the cure, by the protection it affords to the delicate and abnormally sensitive membrane during urinary evacuation. That it has this effect is evidenced by the great diminution of pain which the patient at once experiences during micturition. But as to its modus operandi, we have also to consider its sedative action in subduing crescent inflammation, and its probable quality in neutralizing specific virus, and arresting zymotic increase.

The observance of rest and antiphlogistic regimen would, in all probability, aid the therapeutic influence of this mode of treatment; its beneficial effect is, however, developed under the ordinary mode of life, when attended with no flagrant violation of conduct. As a method of cure, it is in my opinion open to but one objection—namely, its limited adoption, owing to its applicability extending no further than the early stages of the disease, and these often exciting but little attention. Let it not, however, be disregarded on this account; for, undeniably, many cases of clap present themselves while within the power of the remedy; and for these let it be reserved and had recourse to as a means easy of application and effectual in operation; while those cases beyond its influence may, as heretofore, be set aside, to be dealt with after another more expedient mode.

Ectrosis being available only prior to the suppurative crisis, a gonorrhœa which has advanced thus far must be regarded as beyond its influence; and should the disease persist and progress after one, or at most two injections, any further persistence in the use of the remedy must be deemed unadvisable, and the case consigned to the ordinary tedious treatment.

*Lancet, August* 1, 1846, *p.* 129.

[M. Ricord's practice seems very similar to the one recommended by Dr. Arnott. In a clinical lecture at the Hôpital du Midi, Ricord says:]

The treatment I find most generally successful, is the exhibition of copaiba in capsules (six to twelve daily), or cubebs, one to two ounces, together with one injection every day, containing from ten to fifteen grains of nitrate of silver to the ounce of distilled water. The injection should

be as much as possible permitted to pass over the whole of the inflamed portions of the urethra, and therefore the patient should use no artificial means to guard against the imaginary evils attributed to the penetration of the injection into the bladder. If that penetration were possible, which the form and direction of the urethra permit us to doubt, the fluid would instantly be decomposed by its contact with the urine, and its passage over healthy portions of the mucous membrane, can do them no real injury. The combination of cubebs and copaiba in one preparation I reject, and prefer in all cases prescribing them separately, because if one fails in curing the gonorrhœa, the other remains as a precious therapeutical resource. If the abortive treatment prove unsuccessful, or if the acute symptoms of inflammation have acquired a considerable degree of violence before the patient seeks advice, energetic antiphlogistic measures should be used before the exhibition of cubebs or injections. Baths, local depletion, and laxatives should then be employed, and when they have brought down the excitement in a great measure, the abortive treatment may be again resorted to.

Amongst the most troublesome complications of the first stage of gonorrhœa, we may mention dysuria; antiphlogistic treatment and local baths in luke-warm water, are usually sufficient to relieve it, but, occasionally, retention of urine is observed, and the surgeon is placed between the fear of injuring the urethra by the introduction of instruments, and the necessity of preventing over-distension of the bladder. In these embarrassing circumstances, we should first use every means to obtain evacuation of urine without recurring to the catheter—such as leeches to the perineum—cool lavements—baths; but should the retention last more than forty-eight hours, a gum elastic catheter, of a middling size, and presenting a fixed curve, should be gently and cautiously passed in, and in most cases withdrawn after the operation.

Abscesses often form in the vicinity of the urethra; these should be opened at an extremely early period, in order to prevent the establishment of urinary fistula. We have also mentioned vesical tenesmus as a frequent complication, indeed, as a common sign of deep-seated blenorrhagia; it is removed readily by a very simple method, consisting of the injection into the rectum of four ounces of cold water, with the addition of fifteen or twenty drops of laudanum. When gonorrhœa is on its decline, great benefit may be derived from the following injection twice or three times a day:—℞. Aq. destill. rosar, ℥viij.; zinci sulphatis, plumbi s. acetat. aa. ℈j. m.

In chronic gleet, it is of extreme importance to ascertain the cause to which the persistence of the discharge is due. The urethra should be carefully examined in order to discover any thickening or stricture of the canal; if none be found, astringent injections with wine, tannin, alum, iodine of iron (two to four grains to ℥viii), will generally be found beneficial. In rebellious gleet, injections with copaiba or cubebs have been recommended, but we cannot say we have ever found them useful.

*Med. Times, Aug.* 1, 1846, *p.* 341

[With the opinion of Ricord, that injections never produce cystitis, Mr. M'Donald does not agree; he has seen cases of this kind produced; he therefore recommends the nitrate of silver ointment. He says:]

No such results, however, may be apprehended from the use of the nitrate of silver ointment in the manner hereafter described. And that mode of application is far preferable to injection, inasmuch as it is far more manageable, and I believe enables the nitrate of silver more strongly to come in contact with the lacuna magna, which, if it be not the true seat of the disease, yet, nevertheless, holds it firmly. The best method of applying nitrate of silver is, as I believe, that which I before advocated—namely, in the form of ointment,* smeared on a bougie, of the size of the urethra, and introduced for about three inches up its length, and there re-

* Nitrate of silver, one drachm; lard, one ounce. Mix.

tained for about three minutes. After its application, immersions of the penis in warm water has been recommended, and I believe very properly. I do not wish it to be imagined that I am empiric enough to say this means of treatment can never fail; it does sometimes, even when we expect it most to succeed; but as in by far the greater amount of cases it has been found successful, I think it well worthy the attention and practice of surgeons. *Lancet, Sept* 12, 1846, *p.* 291.

[Mr. Brett, again, differs in his opinion from the preceding writers, and offers some good suggestions, which we subjoin. He observes:]

Let us suppose a patient to have presented himself at the early stage of the affection—the sooner the better. My treatment is as follows:—Rest and temperate habits being enjoined, I immediately commence with astringents and copaiba. The astringents which I prefer are, the nitrate of silver, a quarter of a grain to the ounce, used once only in the twenty-four hours,* and the sulphate of zinc and alum, from ten to fifteen grains of each to the ounce; at the same time the capsules of copaiba are exhibited in large doses an hour after every meal. One large dose of the capsules (five or six) is given, when the patient goes to bed, so soon as he feels himself sleepy. The great object is to prevent the nauseating effect of this highly efficacious medicine; for this purpose it must not be taken on an empty stomach, and if the patient can sleep for an hour or two after each dose, it is highly desirable that he should do so; for the same reason, very little fluid should be taken. A small qaantity of jam or jelly may be occasionally taken if nausea occurs. The patient is directed to void his urine very frequently—every half-hour or oftener, in ever so small a quantity—previous to which he injects with a very small glass syringe, not so large as a silver Anel's syringe for injecting the lachrymal sac, and containing not more than half a fluid drachm; this is retained for a few moments, and is carried off by the vis a tergo of the urine, now suffered to escape. If so small a quantity of fluid is injected, it is sufficient to reach along the seat of disease, and it is not necessary to compress the urethra beyond. The rash use of injections without regard to the quantity and distance is as dangerous as the unrestrained progress of gonorrhœa itself. But this is not all: I particularly insist on the importance of stopping the exit of the urine by compression of the orifice, at the same time that the effort is made to evacuate, by which means the copabinized urine rushes into the lacunæ, the lacuna magna especially, where the disease also extends.

Thus we have a repeated constriction of the capillaries of the mucous membrane, and a frequent application of the remedy to the part. I have often seen the discharge cease in two days, without the slightest evil consequences; though it is generally necessary to keep up the influence of the copabine in gradually diminished doses, and the injection of the sulphate of zinc and alum at longer intervals, and of diminished strength. Of course it would be absurd to suppose that these measures can be commenced upon when a patient presents himself with chordee, and every other symptom of acute inflammation, who has neglected to consult the surgeon at the onset of the complaint. This would be as impossible as to attempt to cure, by similar treatment, an acute purulent or gonorrhœal ophthalmia, with chemosis and strangulated vessels, threatening sloughing of the cornea, without the previous use of antiphlogistic measures. We must first subdue these highly acute symptoms by antiphlogistics, diluents, and rest; but we shall, nevertheless, do well to commence with the copaiba; for

* The nitrate of silver is too irritating an astringent to be used often; and when the solution is stronger, it is apt to produce severe inflammation, but, nevertheless, I think that it has the effect of changing the morbid action, and expediting the cure, if used occasionally at long intervals.

when once the urine is impregnated with its principles, we have made one important step in the vanquishing of the disease.

*Lancet, June* 27, 1846, *p.* 702.

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132.—STRICTURE OF THE URETHRA.—By L. A. Mercier, M. D.

[In acute gonorrhœa the inflammation is generally most intense at the fossa navicularis; and in chronic inflammatory affections of the urethra, the disease is worse as we approach the neck of the bladder; and yet it happens that stricture is generally situated at the commencement of the bulb. It cannot be owing to the action of Wilson's muscle, for that is upon the membranous portion. Dr. Mercier observes:]

The explanation I would suggest, without attaching to it too much importance, is the following:—A stricture will be more prone to contraction, and will contract more rapidly, the more highly vascular it is. Suppose, then, inflammation in the prostatic region, kept up by the follicles of the gland, extends to the bulb, what will be the consequence? The prostatic part, being held firmly in a state of extension by the body of the gland, which forms, as it were, an external skeleton to it, will not contract; indeed, for the portion of the urethra which traverses the prostate to be materially lessened in diameter, the gland must almost necessarily be in some degree destroyed, as is remarked in the case of M. Vottens, already quoted. The membranous portion may feebly and slowly become contracted; but the posterior part of the bulb will, from its excessive vascularity, undergo this process much more rapidly; suppose then, the same action going on in the parietes of these two portions of the canal; the contraction of the membranous being slower than that of the bulbous, will be still further retarded in consequence of the impediment to the passage of the urine through the more contracted part. The membranous portion might even dilate from this cause, and the transformation it had already undergone would favour such dilatation; for fibrous tissues contract when left to themselves, but, on the contrary, expand when subjected to long continued and often repeated efforts of distension. I have, I believe, proved that partial dilatations of the heart result from transformation of muscular into fibrous tissue: and are attributable to the extensibility of the new tissue being continually acted on by the blood. What I have now said respecting the membranous portion, receives confirmation from my having several times seen the structural alteration which created stricture at the bulb extending to the membranous portion, without in any degree lessening its calibre. The most frequent seats of stricture, after the bulb, are the fossa navicularis, then the region corresponding to the root of the scrotum, and, lastly, the orifice of the meatus.

[Stricture is very frequently accompanied with inflammation in some other part of the canal; if it be behind the strictured part it may be from irritation caused by the urine. If it be before it, then it is a sequelam of the primitive inflammation, or is caused by the stricture itself, or by stimulating injections applied to the part. Dr. M. observes:]

The most frequent complications, however, are those resulting from the obstructions the stricture opposes to the flow of urine. This fluid, propelled by the contraction of the bladder, exerts, when impeded, a pressure which dilates the canal; but unless the passage be quite impermeable, the urine eventually escaping, the parietes again close upon themselves; and as this pressure is only exercised at comparatively distant intervals, there would not probably so speedily ensue any considerable dilatation, were not the elasticity of the tissues destroyed by inflammation. Occasionally ulcerating action takes place behind the coarctation, and consumes, partially or completely, the parietes of the urethra, and even the stricture itself.—In this latter case the course of the urine may be spontaneously re-estab-

lished; in the former, the results are not so fortunate, but vary, as ulceration is more or less rapid; if it proceed sluggishly, the tissues having had time to become condensed before being laid in contact with the urine, a circumscribed abscess only forms, which commonly terminates by opening externally, and gives rise to urinary fistula. If the destruction of the walls of the urethra be quick, the urine then infiltrates into the cellular tissue between the different organs, and, spreading far and wide, causes sloughs, the separation of which produces frightful denudation. But generally before this takes place, before even the dilatation of the urethra has become considerable, the lacunæ of Morgagni are enlarged, and form small accessory cavities, which I have seen ramifying to a depth of upwards of four lines. Does the ulceration I have spoken of commence in these lacunæ? It has appeared to me probable in several cases, but I have had no certain proof of the fact.

With the exception of dilatation of its ducts, and sometimes the formation of abscess in its substance, the prostate is seldom altered from stricture. Considering, however, what has been said of the inflammatory nature of the hypertrophy of which it is so often the seat in advanced age, this change might be thought frequent when the urethra is affected with stricture; and it has actually been affirmed, but, in my opinion, erroneously, to be so. I have even remarked in elderly persons who have died with this disease, the prostate smaller and its tissue less altered than the age alone of the deceased would have led me to anticipate.

[The assertion Dr. Mercier made, a few years ago, that stricture of the urethra has small influence over enlargement of the prostate, has been very much criticised; yet still he asserts, from more enlarged observation, that he has not met with a single instance in which stricture has been found post-mortem, with the prostate more enlarged than the age of the patient would account for. Dr. M. Ados says:

In fine, then, while hypertrophy of the prostate, with which strictures are commonly thought to be often complicated, is on the contrary a rare completion (so rare, indeed, that it would seem as if stricture prevents the glandular enlargement); we find, them, on the other hand, frequently accompanied with projection of the posterior margin of the neck of the bladder in those musculo-valvular folds to which I drew attention in a former work.

*Med. Gaz., May* 8, 1846, *p.* 801.

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133.—EMPLOYMENT OF CAUSTICS IN THE TREATMENT OF STRICTURE.—By Dr. Civiale.

[The ancient method of treating strictures, "from within outwards," has of late been rendered very precise, as far as theory goes, by the inventions of Ducamp, in France; and our own countryman, Dr. Arnott. Dr. Civiale has given a great deal of attention to this subject. He observes:]

Convinced of the defects of the porte-caustique of Ducamp, I endeavored to remedy them by giving greater length to the part of the instrument which goes beyond the curvette, provided that I was well assured of having entirely traversed the obstacle, before causing the nitrate of silver to project from the conductor. I employed, at first, a metallic instrument, but afterwards I knew that the flexible sound was preferable. My porte-caustique occupies, so to speak, the middle of it. That part of the sound which projects beyond it is at least an inch in length. The length of the opposite end is not so constant; it extends, generally, to eight inches. The smallest porte-caustiques have a diameter of three-fourths of a line. Their flexibility admits of their yielding to all the necessary movements. The conductors which I employ are very simple, and formed of elastic-gum; sometimes straight, and sometimes curved, according to the situation of the stricture; they are seven inches in length, and from two to three lines in

diameter, and, like most instruments of this description, they have a graduated scale, which serves as a guide to the manipulations. The anterior opening is always proportioned to the volume of the porte-caustique, which fills it without being tight.

These instruments, the most simple in construction that have been proposed, are equally so in application. The only difficulty consists in contriving that the extremity of the porte-caustique is completely introduced into the constricted point at the moment when it protrudes from the conductor. This is effected sometimes by proceeding with great gentleness, and by very gentle pressure, accompanied by a slight traction of the penis. There is no fear of the caustic dissolving and acting on the urethra before the stricture, for it is ascertained with certainty that the obstacle has been passed, before even that the nitrate of silver approaches the extremity of the conductor accurately filled by the porte-caustique. But very few attempts suffice to produce the desired effect.

Sometimes we cannot succeed in engaging the smallest porte-caustique into the contracted point, notwithstanding our repeated efforts, whether by modifying the manœuvres, or by employing different conductors, with central or lateral openings. The porte-caustique only protrudes from the conductor to the extent of two or three lines. This slight protrusion, which is sufficient to lead into error, when the instrument of Ducamp is used, or the cauterizing sound, cannot, with the instrument I employ, lead to any mistake. It is to this happy circumstance that I attribute my never having made a false passage, nor observed those severe accidents which the application of the caustic in other hands, and by other methods has produced.

[Civiale is of opinion that the action of the caustic is not thoroughly understood. He says:]

The nitrate of silver does not produce in the urinary canal the effects which are generally attributed to it. Two principal causes have contributed to mislead in this respect. 1st. Practitioners have been led into error by the abundant discharge, but which is not merely from eschars, but consists also of mucus of the urethra, altered by the caustic, and by the coagulable lymph secreted in consequence of the inflammation. 2nd. They have been misled sometimes by the means of exploration, which induced the belief that the obstacle was greater than it really was, sometimes by the dilatability of certain contractions, which led to the mistaking constrictions purely spasmodic, or simple deviation of the canal, for true organic coarctations.

It has been admitted, without reflection, that the nitrate of silver acts solely by its escharotic power; for if each application produced, as has been alledged, a considerable loss of substance, the internal membrane of the urethra ought always to be destroyed, and the parieties of the canal to disappear altogether, when using as many as a hundred cauterizations. Moreover, on one side the obstacle does not depend on a tissue accidentally developed on the surface of the membrane, as it is necessary it should do, in order that the efficacy of the caustic might be attributed to the destruction of this false membrane; but it depends on the alteration of the tissues which it covers, and which the nitrate of silver cannot reach until it has caused this obstacle to disappear entirely. Finally, post-mortem examinations have shown, as I have repeatedly witnessed, that the action of the caustic does not leave any traces on the surface of the canal, and that the alterations which are met with appear to be quite independent of it.

[In a case of simple bridled stricture, Civiale considers the action of nitrate of silver very successful. He remarks:]

A first cauterization is equally efficacious in certain more severe cases. But if now and then we obtain still further success by repetition, a period always arrives when the amelioration first observed subsides, and although the applications are then multiplied, the patient no longer passes his urine with facility. Often even the benefit derived in the first instance, disappears after many months of treatment. Such is the case especially when the strictures are long and callous.

When the coarctations are considerable, and the urethra admits with difficulty the extremity of a very delicate bougie, it is seldom that we can obtain an impression with the explorative sound, liable also, to lead into error; and it is still more rare that the porte-caustique can pass the obstacle. In these cases, which are frequent, we must renounce the caustic, or apply it from before backwards. The application, then, of the caustic, ought to be confined to the cases in which the contraction is linear, the point which it occupies sufficiently dilatable to admit the porte-caustique, and to allow of an exact impression of the coarctation. The result thus obtained serves as a guide, and so soon as the amelioration no longer progresses, we discontinue the use of the caustic, which could now only prove injurious, to resort to other means.

Whenever this rational procedure is departed from, the most serious disorders arise. Without speaking of false passages, which are frequent, and may lead to infiltration of urine (an accident of which Sir Charles Bell has quoted an example); without speaking of inflammation of the bladder, or of hæmorrhages and retention of urine, which have led so many practitioners to renounce cauterization altogether, the action of the nitrate of silver in the canal has other inconveniences which ought not to be overlooked —I allude to the thickening of the parieties of the urethra, and the morbid phenomena which consecutively take place in the genital organs. Many patients in whom numerous cauterizations have been practised, still have great difficulty in passing their urine, although their urethras admit of sounds of large calibre. The constriction which bougies sustain in these cases, shows how much rigidity the canal has required. An attentive examination shows inequalties, cicatrices, indurations more or less extensive, on the points acted upon by the caustic. I have seen these indurations occupy almost the whole of the moveable part of the urethra, the parieties of which had acquired such thickness that great efforts were required to introduce the sound, and greater still to withdraw it after remaining in some time. In these cases, the soft bougies convey often an impression which leaves no doubt of the existence of the lesion, and the patient almost always suffers when an instrument passes the disorganized part of the canal.

*Lancet, July* 25, 1846, *p.* 85.

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134.—URINARY FISTULÆ.—By C. Hawkins, Esq.

A fistulous opening into the urethra in front of the scrotum is always very difficult to heal, and you must always avoid it whenever it is possible. A fistula coming through the perineum, or through the scrotum, has a sufficient thickness of cellular tissue between the skin and the urethra to heal up readily, and all that is commonly required for the new openings to heal, is to enable the urine to pass more readily through the natural passage; but it is not so in the other situation: there it has a much greater chance of cicatrizing, so as to unite the mucous membrane to the skin, and leave the orifice permanently open. If therefore, calculi are passing through the urethra and lodge in front of the scrotum, you should always endeavour to draw them forwards to the orifice, a little of which enlargement may enable them to come out; or if you cannot bring them forwards, you should try to pass them backwards, so as to cut on them in the perineum behind the scrotum. You will endeavour to get these fistula to heal by keeping a catheter in the bladder, through which all the water may pass, while you prevent cicatrization by the application of caustic, or the actual cautery, so that a granulating surface may be kept up till the edges of the skin come together and unite. I thus succeeded, on one occasion, in healing a small opening an inch behind the glans, through which a calculus had made its way by ulceration, and on another occasion, when an opening had been made by a boy tying a piece of string round the penis, which is not an uncommon

trick. But such attempts to heal a fistula on the urethra not unfrequently fail. A boy, about ten years old, was recently sent to me by an old pupil of the hospital, in whom a fistulous opening had been formed, about half way between the scrotum and the glans, by a string tied round and left on eleven weeks before it was discovered; there was a very bad stricture thus formed, which had been two years and a half under treatment, but without any benefit. If the application of caustic, or the actual cautery, fail to keep the orifice raw, so that the granulations may close the orifice, a Taliacotian operation may be tried, though the passage of a little of the urine through the urethra by the side of a catheter makes it difficult to procure union of the new surfaces. A modification of the operation has lately been proposed by Dieffenbach, which consists of not turning a flap of skin round, or bringing the edges of the skin together, but of separating two little lateral flaps of skin sufficiently from the penis at the sides of the fistulous opening, for a larger part of the raw surfaces to be kept in contact; a broader surface for adhesion being thus obtained than when the edges alone touch one another. A case treated by Mr. Le Gros Clark, in this county, is said by him to have thus succeeded, whereas the difficulty of the old operation will be apparent to you from its having been proposed (and I think practised also) that an opening should be made in the perineum, and the whole of the urine obliged to pass for a time through this opening; no drop of water thus irritates the raw surface of the anterior opening, and as soon as it is perfectly healed no difficulty is experienced in healing the posterior one. Fortunately, a fistula in this part is not very common.

*Med. Gaz., Aug.* 7, 1846, *p.* 221.

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### 135.—ANAPLASTIC OPERATION ON THE URETHRA OF MAN.

In 1841, Drs. Segalas and Ricord received from the Institute a divided prize for a new plan of treatment of urina fistula. The method proposed by these gentlemen proved successful in several cases which had resisted various operations, and presented as a leading feature the incision of the urethra, in the perineum previous to suture of the fistula. The surgeons, whose names we have mentioned, were led to adopt this measure from having remarked that agglutination of the lips of the fistula is almost always prevented by the filtration of a small quantity of urine between the walls of the urethra and the catheter; to obviate this cause of failure they resolved upon deviating the course of the urine from its natural channel, by opening the urethra in the perineum, and placing through this artificial orifice a short caoutchouc tube in the bladder. By this operation, performed some three or four days before any attempt at closing the fistula in front of the scrotum, the success of the plastic operation becomes much more probable, union not being interfered with by the contact of urine with the sutures. When cicatrization has taken place—*i. e.*, after a fortnight, or thereabouts, the perineal catheter was removed, a long catheter being substituted, occupying the entire length of the urethra, and the wound of the perineum healed with the same readiness as the incision made for lithotomy. The correspondent of the Medical Times had, when attached to the hospitals at Paris, three opportunities of witnessing the operation, and in all three success was complete. M. Jobert proposes to treat the deformity, peno-scrotal fistula, by single plastic operations, assisted by the permanent catheter; but when it is recollected that this method is very frequently unsuccessful, and that failure is always followed by an increase of the fistula, due to the excision of the lips necessary to suture, the safer though more complicated operation will in all probability be preferred.

*Med. Times, June* 27, 1846, *p.* 243.

136.—EXTRAVASATION OF URINE.—CASES AND CLINICAL REMARKS.—By Mr. QUAIN, of University College Hospital.

[The first case reported is that of a bricklayer, a stout muscular man, 50 years of age, of irregular habits. He was admitted into the hospital on the 5th of March. About a fortnight previously, after a debauch, he found himself unable to void his urine. He was relieved by treatment, and on two subsequent occasions, a catheter was introduced to evacuate the contents of the bladder; shortly after this, he noticed a slight yellow discharge from the urethra, and had scalding; the penis became swollen. On his admission the penis and scrotum were much swollen, of a dusky colour and hard; urine mixed with pus escaped in small quantity from the urethra, when the patient made an effort to empty the bladder. Mr. Quain passed a catheter as far as to the perineum when it came in contact with a rough surface, and was obstructed; fœtid pus and urine dropped from the instrument; it was thought advisable to lay open the urethra, which was done as follows:]

Mr. Quain then cut down through the perineum upon the end of the catheter, and gave vent to the urine and pus; the parts cut through were in a sloughy state; the instrument was not passed into the bladder, as the escape of urine appeared free. A long incision was likewise made through the back part of the scrotum, at the raphé, and the fore-part of the prepuce was freely divided, that part being still very thickened and tortuous, so as to prevent the glans penis from being seen. Very little blood was lost. The tongue, at the time, was rather brown in the middle; pulse soft, but not quick; skin cool. He was ordered a laxative enema, to be followed by an anodyne, and a draught of citrate of potash combined with hyoscyamus, the perineum and scrotum to be constantly fomented.

[On the 29th of the same month the wounds were perfectly healed, and the urine escaped by the natural passages. Mr. Quain made some clinical remarks on this case in which he noticed peculiarities not often met with, as the little appearance of mischief on the back part of the scrotum, where it is generally greatest; and also the fore-part of the scrotum and the prepuce were much swollen, which is not usually the case. He remarked that]

The necessity of speedy and decided interference on the part of the surgeon in such cases was apparent. The objects to be attained are, to give the urine a free exit at the point at which the urethra has given way, or behind that point: and to make incisions for the removal of sloughing cellular membrane. The operation in the perineum to attain the first object is the same in all, or at least the great majority of cases; a free incision is to be made into the urethra, through which the urine is suffered to escape, as after lithotomy; no instrument is passed from the perineum into the bladder, the continued presence of one in that organ being generally injurious. The extent of the incisions for the accomplishment of the second object must vary with the extent to which the urine has been infiltrated, and this in proportion to the time during which the patient has been left without relief, and the closeness of the stricture in the urethra. In one case, there is a circumscribed swelling in the perineum, attended with burning pain, every time urine is voided (abscess in perinæo); in another, the swelling is more extensive, is elongated, and reaches across the perineum; in a third, the back part of the scrotum is likewise affected. In these different cases, examples of each of which have, within a short time, been in the wards of the hospital) the urine escapes by the urethra with more or less facility, and only a small portion of that fluid issues from the natural canal into the cellular membrane. But when the retention is complete, the patient makes violent and uncontrollable efforts for evacuation, and at length the bladder is emptied, as in the case above detailed.

[Mr. Quain has given other three cases in which the urine became extravasated, and makes some remarks on the local treatment, besides incisions, required in such cases. He observes that]

Besides the incisions, which should be at once resorted to in cases of extravasated urine, the local treatment used in these patients consisted in the application of warm poultices till the sloughs were separated, and careful support of the scrotum, should that part be affected; afterwards astringent lotions of sulphate of zinc were usually applied. As regards the general treatment, the patients at first are in a state of high fever; the skin is hot, the pulse very quick, tongue coated, often dry and brown, and in most cases the countenance wears an expression of agitation and apparent anxiety concerning their condition. Soon, however, the pulse becomes small and the skin cold, or even clammy; this change probably accompanies the mortification which goes on in the parts through which the urine has been infiltrated. While the fever is present, the bowels should be unloaded by an enema, and Dover's powder given to procure rest. Afterwards, when the low state comes on, the principal resources are stimulants with opium, until, with returning health, food is taken in sufficient quantity. The form of stimulant is not a matter of indifference; brandy or gin is almost always resorted to by Mr. Quain. He states that he has long discarded port wine; it disagrees with most stomachs, particularly empty stomachs. He has repeatedly seen persons who had been low, and apparently sinking, revived, so to say, under the use of the simpler form of alcoholic drink. Alcohol is easy of digestion, and is, therefore, on this ground, suited to the depressed state of these patients. It is food for respiration, and perhaps it is on this account, in addition to its stimulating influence, that the temperature of the patient becomes raised under its use. But these are reasonings á posteriori; after the fact has been ascertained, and the fact itself is the important matter in a practical point of view. Opium is of the utmost importance in these, and some other diseases affecting the urinary organs, allaying pain and the apprehensions about themselves which these patients so generally feel, and procuring sleep, of which they are nearly altogether deprived. The patients, whose cases are above noticed, took half a grain of muriate of morphia in a draught, or a quarter of a grain repeated at the interval of four hours.

In the cases above noticed, the urine escaped from the membranous part (so named) of the urethra, and it very rarely occurs in any other part. Occasionally, however, the urethra ulcerates in the erectile tissue of the penis (corpus spongiosum), and the urine escapes into that structure.

*Lancet, June* 20, 1846, *p.* 670.

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137.—CAUSES AND TREATMENT OF INDURATED CHANCRE.—By Wm. Acton, Esq.

If one symptom of venereal disease can be called more important than another, the united voice of the profession has declared it to be the induration which attends primary sores—a subject well deserving the consideration of those who are called on to treat syphilis in its primary or secondary forms.

Experiments,* by means of inoculation, have recently demonstrated that the syphilitic virus coming in contact with living animal tissues produces certain definite effects; that in some cases, but not in all, induration will come on, in one or other of the forms presently to be mentioned; and observation has proved, that when such induration does appear, secondary symptoms invariably follow. Experiment and observation induce us to believe that syphilis, when attended with induration generally, is a trifling local malady, and that secondary symptoms are not to be dreaded.

Previous to the complete series of experiments which have established these facts, surgeons denied a sore to be a chancre unless it was indura-

*Vide Complete Practical Treatise on Venereal Diseases, with Atlas of Plates, by W. Acton, p. 217, et seq., and plates 1 and 2.

ted: we have, however, now reason to believe, that the poison is one and the same, whether induration be present or not, and it behoves us, therefore, more accurately to study induration, as apparently it will, in some way or other, assist us in solving the difficulties surrounding this part of pathology.

*Commencement and Course of Induration.*—The surgeon who has opportunities in private practice of observing sores in their earlier stages, finds the first indications of induration in the conversion of the slight puffiness around a common sore into some thickening, which gradually increases, until, in the words of Hunter, "it is very circumscribed, not diffusing itself gradually and imperceptibly into the surrounding parts, but terminating rather abruptly. Its base is hard, and the edges a little prominent." Such a sore is attended with slight pain, it secretes little, and, in fact, makes but trifling progress, and may exist for some weeks in this chronic state. In other instances, an excoriation following connection does not heal, slight discharge takes place, which can hardly be called pus, but at once the base becomes somewhat thickened; this soon acquires firmness, and, like the former sore, has a stationary character, the induration seemingly in an inverse proportion to the ulceration, which, however, still exists. In still more uncommon cases, I have observed a moist surface, perhaps as large as a sixpence, looking like a patch of eczema, with ulceration barely observable on it. The base of this becomes thickened, and then indurated; the surface may cicatrize, leaving only the induration. Some authors admit the imbibition of the virus without previous abrasion.

In other instances, a sore or excoriation will have healed entirely, when the patient or surgeon may be surprised at the cicatrix becoming gradually indurated until a cartilaginous mass is formed, but confined to the situation of the sore which had previously existed. In whatever manner indurated chancres may have commenced, their progress is usually characterised by little, if any, pain or discharge. The consistence of the induration seems to increase, as well as its extent, until it becomes like a piece of cartilage, of a clear pearly color; no vessels can be seen permeating it, and in this respect it differs from the surrounding surface. In some of these cases the ulceration will heal gradually; in others it will increase to a considerable extent, or it may remain stationary, in spite of all our local means to assist cicatrization. If no mercury be given, and the case be allowed to run its course, secondary symptoms will appear in a few weeks, and, after an indefinite time, the induration may abate, and ultimately disappear. If, however, no treatment is pursued, or if friction of this indurated mass accidentally follows, ulceration will occur, depending, as I believe, on stimulating applications, or excessive inflammatory action, or unusual rapidity in the induration, incarcerating, as it were, the distended cellular tissue within the ariolæ of the infiltrated dermis, and causing mortification of the part.

When mercury is given in the manner hereafter to be recommended, we witness a very peculiar effect on the induration; the circumference of the indurated mass becomes redder than usual; there seems to be increased action of the vessels; the transparency becomes less and less, and absorption of this interstitial deposit takes place rapidly, particularly if it has existed only a short time. But it does not take place so rapidly as it was deposited.

*Complications.*—Indurated chancre is attended with fewer complications than most other forms of primary syphilis. As above observed, inflammation is rarely met with interfering with the course of induration. Bubo is an uncommon occurrence, and, when present, is, like the attendant sore, a very chronic affair. One gland may slightly enlarge and continue in that state, but we seldom find it suppurating, unless by the negligence of the patient. One of the most common and tiresome complications is a general or partial thickening of the prepuce, preventing the patient from retracting the foreskin, thus allowing the secretion to accumulate, particu-

larly if the indurated masses are at the orifice. I have above alluded to the ulceration of the surface of the sore, and need not here, therefore, speak of it.

*Lancet, July* 25. 1846. *p.* 101.

[Mr. Acton has shown, that as a general rule, all sores on the genital organs should be treated with nitrate of silver; experience testifies to the efficacy of this treatment, in preventing the contamination of the system, if it be applied within three days; and even after that time, in nine cases out of ten, it is to be reasonably hoped, that no secondary symptoms will follow. Still, with all this evidence in its favor, there are circumstances which contra-indicate its use, and amongst the foremost of these, stands inflammation. Mr. Acton observes:]

When chancres are attended with acute inflammation, caustic will be worse than useless: experiments prove that phagedena destroys the virus, and they likewise show us that caustic increases instead of allaying inflammation; therefore, when present, recourse must be had to opium, rather than to nitrate of silver, as I shall attempt to show on some subsequent occasion. But it is not alone in acute inflammatory chancres that we must lay aside the use of caustic; we should never apply the salt when previous applications have irritated the sores, or we might continue to use ad infinitum without healing the ulcer.

On April 12th, 1846, a gentleman who had previously suffered from chancres, and experienced the benefit of cauterization, had connexion with a suspected female, and observing an excoriation the next morning, himself applied nitrate of silver most plentifully; the eschar fell in twenty-four hours, and, the patient states, a quantity of pus escaped; he thought it necessary to burn it a second time, and applied the caustic freely; in two days, feeling alarmed at the pain and redness, he called on me. A pustule, exactly similar to those delineated as following inoculation in the atlas of my work on venereal diseases, appeared on the penis; the white pellicle was surrounded with an inflamed areola, and there was some pain. I felt pretty well convinced that this was the result of irritation alone. I prescribed water-dressing, and the pustule healed in a few days. Now this is one of a large class of cases where diagnosis is difficult, and which are often seen in private practice, arising from irritating applications. A few days, however, generally clear up any doubts a surgeon may have; for if it be the result of irritation, the pustule heals; if chancre, the disease loses no time in progressing, and the surgeon has the certainty of treating a venereal sore, instead of one of these simple irritated excoriations, which I have more than once seen submitted to a course of mercury, under the supposition that the patient has a virulent disease.

Another contra-indication to caustic is induration of a sore; the surgeon should never cauterize a genuine Hunterian chancre, or one attended with induration; if he does, he will cause great pain, the sore will become irritable, and gangrene will often follow, as I have observed in several instances. Cauterization of such sores shows great ignorance of the objects and aim of the employment of nitrate of silver, as well as of induration; for as these sores secrete but little, we have scarcely any virus to destroy. If it were our object to destroy the mass of induration, we must have recourse to a much stronger and deeper caustic than nitrate of silver, such as Vienna paste; but even destroying the induration would be of no good, as experience shows that where it exists, the constitution is already contaminated, and if removed, we should have no criteria to go by of the state of the system, until secondary symptoms break out. The ulceration on indurated sores depends on the hardening impeding the cicatrix forming, and to remove this, absorption must be brought about by mercury, as I shall hereafter show, in speaking of indurated chancres. From these considerations, then, I never employ caustic where there is induration, and I do not find patients complaining as they are said to have done formerly, that destroying chancres with caustic produces secondary symptoms, from driving the

disease into the system, a charge it is well to avoid, however impossible such a thing is believed to be by well educated persons.

*Lancet, June 6, 1846, p. 627.*

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138.—INSTANCE OF DISEASE CONTRACTED FROM A NURSED CHILD.—By J. C. EGAN, M. D., &c.

[In the second number of the Dublin Quarterly Journal of Medical Science, Dr. Egan published some remarks on the subject of the contagious nature of secondary syphilis, and brought forward cases in support of his views; since then another case has come under his observation, which he communicates to the *Lancet* of August 22. It is as follows:]

Mary S——, aged forty-eight, married, and mother of five healthy children; of strictly temperate habits; her husband a man of excellent character; admitted into the Westmoreland Lock Hospital, April 3rd, 1846; states, that about October last, she first took charge of her daughter's child (then one year and a half old) to dry nurse. At this period, there were sores on the verge of the anus of the infant, the mucous membrane of the lips was inclined to peel off, and the tongue was the seat of small white blisters. Shortly after birth, an eruption presented on its body, which had been alternately declining and reappearing up to the date of her attendance on it. She likewise states, that she was constantly in the habit of kissing the child during the time its mouth was affected, and more than once applied her lips to the sores on the anus. The mother contracted disease from her husband a few months after marriage (now six years), which appeared in sores on the labia pudendi. Since then she has borne five children; the first lived a year and a half, when it died, extremely attenuated from repeated attacks of the disease; the subsequent children, with the exception of the present, were all premature and still-born. About the latter end of December last, the nurse perceived, for the first time, blisters on her tongue, with a fissured state of the lips, which disappeared in the course of six weeks without having recourse to any mode of treatment. During this period, she describes herself as "very dead in spirits," and an unaccountable oppression over her. In a month after the tongue and lips had healed, she was attacked with an inveterate itching of the vulvæ; which was succeeded by elevated (condylomatous) sores. At this stage she appears to have undergone an irregular and imperfect course of mercury; the sores healed, notwithstanding, but inflammation of the right eye quickly ensued. She was again subjected to mercurial treatment, ptyalism supervened, and the eye regained its former healthy condition. She now remained free from disease for about a fortnight, when within the last ten days the left eye was similarly attacked, and for which she was admitted into hospital. On examination, the external structure of the eye presents a deep scarlet-red colour; the pupil is irregular and indistinct, and surrounded by whitish tubercles; the membrane of the aqueous humour is semi-opaque, giving the appearance of turbidness to that fluid; she complains of extreme intolerance of light, and intense pain in the supra-orbital region; cannot clearly distinguish any object; never had any form of eruption.

Local depletion was resorted to; pills of calomel and opium were prescribed, with the external use of extract of belladonna. It would be trespassing needlessly on our space to give the daily reports of the case; but on the 9th of April ptyalism was fully established, inflammation was reduced, but a dimness of vision remained, which was subsequently removed by blistering and collyria, and she was discharged cured on the 4th of May.

*Observations.*—The foregoing case contains two features of considerable importance—first, it tends to establish the point as to the communicability of secondary syphilis from the child to the nurse; and secondly, it proves that infection may be transmitted to the *dry* nurse, without any apparent

breach of surface on the body of the latter. I would wish here particularly to notice what I have elsewhere stated, that it is only where the nurse is engaged tending, not suckling the child, that contamination may be apprehended from mere contact, as in every instance which has come under my observation, in which lactation was being carried on, the nurse enjoyed perfect immunity from disease, until some solution of continuity occurred either in the nipple or adjacent structure. How this process may serve as a safeguard to the constitution, under such circumstances, I leave to future investigators to determine, contenting myself for the present with the mere statement of a fact which, as far as I am aware, has not hitherto been noticed by any writer on the subject. The opinions of the late Dr. Colles are well worthy the attention of those engaged in this important and interesting inquiry: but having on a previous occasion drawn largely on that authority, it is unnecessary here for me to revert to the statements contained in that particular portion of his treatise. *Lancet, Aug.* 22, 1846, p. 214.

[Dr. O'Connor brings forward the following case of this kind:]

Julia Walsh, a woman of good constitution, the wife of a peasant labourer, both bearing an excellent character, got a child to nurse, which, at the time, was in wretched health, and was observed to have some sores on the mouth, around the anus, and on the scrotum. It was also remarked that the mother of the child had an eruption on her skin, and a sore on her breast. Shortly afterwards, the nurse having perceived a sore on her nipple, and that the rash on the child became more general, went to a quack, who pronounced it to be chicken-pock, which he would readily cure, and gave her twelve pills, which made her mouth sore. Her alarms not being quieted, she remonstrated with the father of the child on her condition. He accompanied her to the man who was in attendance on her, promised to pay him for curing the nurse and child, and at the same time put his own wife under his care; from which it may be inferred that he was of opinion that they were all suffering from the same complaint. Shortly after this, she went to Dr. Ahern, of this city, who at once pronounced that both the nurse and child laboured under syphilitic disease. The symptoms which then presented themselves, as appears from his testimony, were an ulcer on the nipple, with a syphilitic rash on the breast, and ulcers at the angles of the mouth. When she presented herself, some time after, to Dr. Bull, she had, in addition, condylomata on the palate and round the anus, with tubercles on the pubes, several of them with yellow ulcerated heads.

In this state she came under my care in the workhouse hospital—where she remained about six weeks—but went home without being quite well, being anxious that her confinement, which was approaching, should not take place in a workhouse. She was soon afterwards delivered of a child, which was covered with a syphilitic rash, and which died shortly after its birth. Some weeks after the wife first complained, her husband was taken ill. His symptoms were several tuberculated ulcers on the dorsum of the penis, with desquamation of branny scales all over the body, and loss of hair. Of the husband, it may be observed, that although he accompanied his wife to the quack, and to Dr. Ahern in the first instance, he never complained of himself, and that when he did feel ill, he made no concealment of his symptoms. A child of Walsh's who had been previously healthy, also got condylomata round the anus and on the palate, which the mother attributed to her having been fed with the same spoon as the diseased child. She never had any symptoms of syphilis but these, and was in other respects in good health.

In looking over Mr. Colles' work on Syphilis, I was struck by the exact resemblance between all the symptoms and facts I have described, and those detailed by him in page 283, with much more clearness and accuracy. How far this case will bear out the conclusions which he drew from his vast experience, I shall not attempt to say. But without entering on

the question as to whether secondary syphilis is contagious or not, a practical question may be asked.

Is there danger in nursing a child affected with syphilitic eruption? Are we justified in saying that the almost universal opinion is, that there is danger, in such case, of the nurse becoming affected with the disease? These questions may, I think, be answered in the affirmative, even admitting that secondary syphilis is not contagious, as the modern advocates of that opinion assert that primary disease may be reproduced in parts of the body where it could be least expected, as the mouth, or nipples, &c., and this during the existence of a secondary eruption. There is no class of patients in which this is more likely to occur, than in infants, from their attendants passing the towel with which they wash them over every part of their body, which may convey primary disease, if it existed, from one part to another. *Lancet, June* 20, 1846, *p.* 691.

[Mr. Acton differs in opinion from the preceding writers, with respect to the contagiousness of secondary syphilis. He says:]

As far as the result can be tested by inoculation, secondary symptoms are not inoculable; within the last few days I have again tested this in the presence of several gentlemen. A man was suffering under tubercular syphilitic affection of the arm; the tubercles ulcerated. With a lancet we scraped off the epidermis on a healthy portion of the arm, and applied a piece of lint, soaked in the secretion, to the abraded surface, and maintained it there for twenty-four hours. Slight irritation, followed by ulceration, came on. This ulcer healed immediately the irritating secretion was removed, proving that the sore depended upon the simple irritation of the secretion, and upon nothing specific, just as an issue is kept up by means of peas, or any other foreign substance.

Without denying the possibility of their occurrence, I have never yet been able to meet with instances which I could assign to contagion of secondary symptoms, and I must hesitate before yielding my opinion, knowing as I do from experience the difficulties that beset the question; they are only cognizable to those who treat syphilis. I give one example which has lately occurred to me. A medical practitioner wished me to see a female, recently married, labouring under condylomata. To prevent family disputes, I desired the husband to call upon me. On examining him, there was no trace of syphilis, primary or secondary; and he then broadly hinted, that since he was married he had heard of his wife's immorality previous to his acquaintance with her: this she subsequently acknowledged. Now, had she been able to infect her husband, most practitioners would have disbelieved the husband's statement, and pitied the unfortunate wife. This case proves what experiments induce us to believe—viz., that condylomata and secondary symptoms are not contagious; and I must repeat, that hitherto every instance I have seen corroborates the results of inoculation. During the last year a paper of mine was read before the Royal Medical and Chirurgical Society (reported in the *Lancet* for May), in which a child, hereditarily affected by the father with syphilis, never infected the mother who suckled it; and I have met with similar instances. *Lancet, Aug.* 1, 1846, *p.* 127.

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139.—SYPHILIS.—TREATMENT WITH IODINE AND MERCURY, FOR THE DULL ACHING PAINS IN THE LONG BONES, &c.—By W. P. Ormerod, Esq.

In no form of disease is the employment of hydriodate of potash attended with greater benefit than in cases of dull aching pains in the long bones. In some cases marked relief is felt after a few doses of the medicine have been taken. In the majority, some improvement takes place in a few days, and the cases are very rare in which more or less benefit does not arise from it. In the more severe cases of this affection, the patients are hag-

gard and weary from pain and loss of rest; they rarely have any marked degree of fever, but often labor at the same time under affections of the throat and skin. The pains under which they labour are dull and constant, with occasionally attacks of severity, especially at night, and on the occurrence of any damp weather. The painful parts present rather a degree of fulness, than swelling, being covered with a thin layer of firm œdema; so that the naturally flat surfaces of the bones feel somewhat convex, and their sharp edges are blunted. This affection may be accompanied with hard and soft nodes, but often occurs without any affection of that kind. It sometimes happens that mercury, opium, hyoscyamus, and other means, successively fail in affording any decided relief to this affection, and the patient suffers severely until iodine is employed. The hydriodate of potash, in doses of from five to eight grains, administered three times in the day, acts often like a charm, and gives a greater degree of relief than any other means. This relief generally continues until the pains are more or less completely removed, and an increase of the dose beyond twelve or fifteen grains of the hydriodate of potash in the twenty-four hours is rarely required. When iodine fails to afford some earnest of future benefit soon after the commencement of its employment, it is not commonly found that any very great benefit follows its exhibition, either in large doses, or after a long continuance of its use.

With regard to the benefit derived from mercury in secondary affections, the following appears to be the general rule. The scaly eruption, the excavated ulcer of the tonsil, the syphilitic swelling of the testicle, the excavated ulcer of the tongue, the acute ulcers of the edges of the eyelids, iritis, the purulent discharge from the external auditory meatus, and some cases of pains in the limbs, require the employment of mercury in a decided manner. The greatest benefit in cases of papular eruption, unaccompanied with fever, in those forms of tubercular and pustular eruption which have a tendency to desquamate rather than to suppurate and form ulcers, and also in those cases where numerous small secondary ulcers occur on the body, of persons not much reduced in health. The fissured tongue, and the syphilitic ulceration round the nail, are benefitted at times by mercury, but not always. The employment of mercurial fumigation in cases of pustular eruption, phagedænic ulcers of the skin, and foul, sloughy ulceration of the pharynx, is attended occasionally with the greatest benefit; but it is a hazardous means, and requires the watching.

*Med. Gaz., Oct.* 9, 1846, *p.* 629.

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### 140.—SYPHILIS AND GONORRHŒA.

[An experienced army surgeon states, that in the course of a very extensive experience in public and private practice, he has never known gonorrhœa, however virulent, to be followed by syphilitic symptoms, and believes that in every case there was a true syphilitic chancre somewhere, most probably in the urethra. When in complication with clap, such sores easily escape the notice of the surgeon. He gives the following case as an illustration:]

A bachelor, in a respectable station of life, and in the enjoyment of good health, contracted gonorrhœa, to get cured of which he put himself under the care of a respectable general practitioner, in a country town. In about six weeks he was pronounced well; but three months subsequently he felt a soreness in his throat, and perceived some blotches on his skin. For this he consulted one of the surgeons to the County Hospital, and upon examination it was discovered that the throat was ulcerated, and the disease was considered to be syphilis in a secondary form. The patient was put under a course of the usual treatment (mercurial), under which he got well. Having continued perfectly well for five or six months, he got married in

the month of September, 1842. In a little better than a year from the date of the marriage, the wife lay in of a healthy child, which has never experienced any interruption of health, and is to this day perfectly well. The wife fell with child a second time, and when about seven months gone, her medical attendant was called in on account of a sore throat, which had resisted domestic remedies. Upon investigating the case with caution, the throat was found ulcerated, and the surgeon had, in his own mind, no doubt but that it was a case of secondary syphilis. From the information that the surgeon could collect, by the most delicate, but at the same time, most efficient inquiry, he came to the conclusion that the patient had not had a primary sore—besides which she was a person strictly moral, and above all suspicion.

Inquiry was then made into the husband's state of health, when the details of the affection before marriage, were learned; and it was further discovered that he was then laboring under an inflamed throat, with a sense of dryness and constriction in the fauces, and that there was also a papular eruption upon the chest and neck, invading posteriorly the scalp under the roots of the hair.

The husband had never been guilty of any infidelity towards his wife, and was positive that he never had, even before his marriage, any ulcer or excoriation upon the penis, and having been so long well, and free from all symptoms, he could not suppose that he was labouring under secondary symptoms, and would not submit to treatment, trusting that the affection was merely temporary, and would vanish without medical aid. The wife, however, used the remedies prescribed for her, and remained under a mild course of treatment from the 26th of November to the 26th of December, with manifest advantage. On the 5th of January she was delivered of a male child, apparently healthy, and of the full time, or nearly so. On the third day the child was covered all over with a papular purple eruption. A consultation was immediately had with one of the physicians to the County Hospital. The physician suspended his opinion as to the nature of the disease till he paid a second visit; but then he concurred in the surgeon's views, that it was a clear case of syphilis. The child died on the third day from the appearance of the eruptions. The mother's throat, which had been mending under the treatment before her accouchement, began to get worse soon after she left it off; and it was deemed advisable, about a month after her delivery, to put her under a mild course of mercury. A slight ptyalism was produced, and kept up for nearly two months, when a cure was effected. The husband finding that he was getting worse, and witnessing the good effects of the treatment upon his wife, submitted to a similar course of mercurial treatment, and was effectually cured. Up to this time there has been no reappearance of the disease in any form; but the wife, who became pregnant again, lay in of a six months' still-born child, without any assignable cause for such an event. Her health, as well as that of her husband, continues good. *Med. Times, July* 25, 1846, *p.* 332.

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141.—USE OF BROMIDE OF POTASSIUM IN SECONDARY SYPHILIS.

The low price of the bromide compared with that of the iodide of potassium, has induced M. Ricord to substitute that salt for the iodide in the treatment of secondary syphilitic affections. The dose of the bromide is the same as that of the iodide of potassium. It has produced the same therapeutical effects, but more slowly.—Journal de Pharmacie, Avril, 1846. *Med. Gaz., May* 29, 1846, *p.* 972.

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142.—ON THE SYPHILITIC AFFECTION OF THE TESTIS.—By M. Helot.

[Syphilitic affection of the testis may be distinguished from gonorrhœal affection by the following circumstances:]

In the gonorrhœal epididymis, the attack comes on suddenly with the attendant train of inflammatory symptoms; it shows itself during the course of gonorrhœa, or at the moment of its disappearance. On the contrary, the commencement of the syphilitic testicle is essentially chronic; it appears, as we have above remarked, long after the primary symptoms, constituting a consecutive affection. The gonorrhœal and syphilitic affections are thus two distinct complaints, except where the one terminates in the other; but the course, lesions, and terminations of these two affections show no further relation between them.

In the syphilitic affection of the testis, the organ is, even at the commencement, hypertrophied; in the gonorrhœal form, the testis, on the contrary, commonly preserves its elasticity and its size; the epididymis is principally affected, and if, in exceptional cases, the testis itself participates in the inflammation, an inflammatory swelling follows, quite at variance with the chronic ealargement of the syphilitic complaint. In the gonorrhœal orchitis, the tumor is painful, the skin of the scrotum red, tense, and shining; the cord, when it is affected, becomes painful to the touch. In the syphilitic testicle, the enlargement is most commonly indolent from the commencement to its termination, and pressure with the hand on the testis and cord is unattended with pain. The anatomical characters of the two affections are equally opposed; thus, in the gonorrhœal affection, it is always the epdidymis in which the complaint commences, and in the majority of cases, the body of the testis remains free from disease; the contrary happens in the syphilitic affection of the organ.

[Simple hydrocele can scarcely be mistaken for the syphilitic testicle; it is not, however, so easy to distinguish what has been called by Pott, Boyer, Velpeau, &c., "hæmatocele." M. Helot observes:]

The scrofulous affection of the testicle may, under certain circumstances, be mistaken for syphilitic affection of the testis, and the diagnosis may present great difficulties. Thus, for example, a patient having had syphilis, may be be attacked with a scrofulous affection of the testis; what then are the characters drawn from tumor which may tend to clear up the case, and decide whether we have to treat one or the other affection? First of all, in the scrofulous testicle there are two varieties of swelling, one formed by the tuberculous infiltration of the whole organ, the other formed by the developement of encysted tubercles, either in the epididymis or in the body of the testis. We have remarked, that in the syphilitic affection of the testis the epididymis is rarely diseased; in the scrofulous affection, on the contrary, the complaint commences usually in that organ, and extends only to the body of the testis at a subsequent period. The scrofulous testicle commences by isolated enlargements; but these nodules become chesnut-shaped, very prominent, standing out in relief, as if attached to the epididymis or testicle.

The induration we observe in the syphilitic affection of the testis is almost invariably contained in the thickness of the body of the testis itself. Notwithstanding this character, drawn from the situation of the affection in the epididymis in the scrofulous disease, and in the body of the testis in syphilitic affections—notwithstandiing the form of nodules, which present differences thus marked, still the diagnosis may be very difficult, particularly at the commencement of the complaint. It becomes more easy when the swelling has acquired a certain size; for then, in the syphilitic affection the induration is complete, the testicle uniformly hard, and the hypertrophy so inconsiderable, that we do not recognise any longer the natural elasticity of the organ. In the scrofulous affection, on the contrary, the nodules, (when they exist), in becoming more prominent, often lose their hardness; and we meet with the other portion of the organ retaining its natural elasticity. In the tuberculous infiltration of the testicle, the swelling is more regular and rounded, approaching, it is true, to the syphilitic character; but its hardness is less evident: the testicle retains a certain proportion of its

natural suppleness, which contrasts strongly with that cartilaginous hardness of the syphilitic affection of the testicle. Moreover, it is rare for the testicle to be infiltrated with tubercules, without the body of the epididymis, at the same time, presenting prominences in different degrees, from a state of induration to suppurative softening. We have seen, in the syphilitic affection of the testis, the cord generally remaining in a healthy condition, or if it enlarges, it does so in a gradual and uniform way, presenting no inequalities or prominences; whereas, in the scrofulous affection, particularly in the advanced stages, it is not uncommon to find the cord studded with tubercles, resembling a bead necklace. Although the course of one or the other affection is similarly chronic, nevertheless it presents differences which may be useful in forming a diagnosis. Thus the syphilitic affection of the testicle is more indolent than the scrofulous, which presents, from time to time, inflammatory accessions, characterized by a sense of tension of pain, which is augmented by the touch. The ordinary termination, by resolution, of the syphilitic affection of the organ, opposed as it is to the suppuration of the scrofulous disease of the organ, is likewise very important in differential diagnosis.

The syphilitic is often difficult to be distinguished from the cancerous affection of the organ. How many tumors of the testis have been removed by the knife, which might have been cured had the true nature of the complaint been suspected. The rapid development in the encephalic tumor of the testis, the considerable size it will attain, its softness, which may often impose on the surgeon, leading him to believe it fluctuative; the unequal resistance it presents, the darting pains which occasionally come on, mark a striking contrast with that uniform hardness, indolent character, and moderate size of the syphilitic enlargement of the organ. The cord in the cancerous affection is often knotted, hard, and unequal, and we know how uncommon the uniform hypertrophy of the cord is in the syphilitic affection. The engorgement of the glands in the iliac fossa is observed sometimes in the cancerous affection of the testis, but never happens in the complaint we are treating of. Authors, and, among others, Sir Astley Cooper, have described, under the name of schirrus of the testis, a variety of cancer which might be more easily confounded with syphilitic affections of the testicle, as its development is slower than in encephaloid disease, and presents, from its commencement, hard nodules; but these are hard from their formation, and become more and more so in schirrous affections, which we do not observe in the venereal testicle. Notwithstanding the characters above given, the surgeon, amid all his doubts, has no other proof than a rational treatment to follow, in extricating himself from his uncertainty.

[The syphilitic testicle is one of the consecutive secondary symptoms of syphilis; it may be said to border on the tertiary, hence it will require the treatment applicable to these periods.]

M. Ricord is in the habit of combining the mercurial treatment with the employment of iodide of potash. I consider the combined use of these remedies better than their administration singly. We have frequently seen the employment of the iodide alone bring about only a slow resolution, which the use of mercury has expedited. M. Ricord prescribes one or two pills every night, containing five centigrammes (about three-quarters of a grain) of proto-ioduret of mercury. During the day he gives the iodide of potash in doses of one or two grains in ptisan. It matters little, however, what preparation is given, provided the patient continues the treatment uninterruptedly and regularly, and for some time after a complete cure has been effected.

When effusion has taken place into the tunica vaginalis, it is not usually necessary to puncture the swelling, or inject the sac. Most frequently this consecutive hydrocele disappears of itself, and it is only in cases where the fluid is not absorbed after the cure of the testis that we feel called upon to tap the swelling which may inconvenience the patient, or inject it to effect a radical cure.

We should not neglect topical remedies to favour re-solution, such as mercurial frictions on the scrotum, or the application of a bego-plaster with mercury, which must be renewed from time to time. Compression by means of Frech's plan with strips of the same plaster will assist in dispersing the swelling. The following is the best we have tried. It is well, before applying the compression, to evacuate by a lancet, the fluid in the tunica vaginalis, if it be collected in large quantities; seizing the testis with one hand, bind a strip of plaster round the cord just above the testis with the other, forming a ring, to prevent the escape of the testicle, thus avoiding the compression; then, by means of other straps, we encircle the body of the organ by subsequent turns, so as uniformly to cover it. This dressing ought to be renewed as often as the strapping becomes loose.

How far is the mercurial treatment to be pushed? Generally, it ought to be continued some time after the disappearance of every symptom. Nevertheless, however, as in some cases, the hypertrophy seems to be permanent; there is a limit beyond which we should not carry the mercury, so that when we have varied sufficiently the mode of administration, if we find the tumor cease to feel the influence of the remedy, after it has sensibly diminished, and now remains stationary, it will be useless to insist on carrying the remedy further. I terminate this article by saying, that the difficulty of differential diagnosis of tumors in the testicle, and the frequency of syphilitic affection of the organ, ought to render the surgeon very circumspect on the necessity of amputation. And ought we not to follow the wise, enlightened conduct of the great surgeon of the Hotel Dieu, who put his patients under mercurial treatment even in cases where he had many reasons to suspect the cancerous nature of the affection, from fear of removing by the knife an organ which he might have preserved?—*Journal de Chirurgie.* *Lancet, June* 20, 1846, *p.* 675.

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143.—CONTRACTION OF THE PREPUCE.

[At a recent meeting of the London Medical Society, Dr. Golding Bird alluded to the case of a child, seven or eight weeks old, an out-patient of Guy's hospital. This child had become almost lifeless just after sucking; it was apparently labouring under the effects of a narcotic; it had not, however, had anything of the kind given to it, nor had it sustained a fall, nor was the head so large as to lead to suspicion of congenital hydrocephalus. Dr. Bird adds:]

On inquiring if the child passed water, the answer led to an examination of the prepuce, which was found to be elongated, and had an aperture only of the size of a pin-hole, like a puncture in the intestine. The urine was dribbling out; it was evident that the child had never completely emptied the bladder. Mr. Hilton slit up the prepuce, and all the symptoms were immediately relieved, and soon entirely removed. Dr. Bird referred to a case which he had related to the society some years since—and which was reported in the Lancet at the time—of a child who fell a victim to a malformation of this kind; and after death the bladder and ureter were found like those of a man who had long suffered from stricture.

Mr. Hilton had seen many cases similar to the one mentioned by Dr. Bird. The greatest benefit resulted from slitting up the prepuce. In this case the benefit was very remarkable, a partial paralysis of the left side, under which the little patient laboured, being quite removed in twenty-four hours. *Lancet, May* 16, 1846, *p.* 553.

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144.—CASE OF HYPERTROPHIED SCROTUM AND PENIS; ITS REMOVAL BY OPERATION.—By F. H. Brett, Esq., F.R.C.S.

[Mr. Brett's patient was a locksmith, forty years of age. He had suffered from stricture twelve years ago, and for the last four years the urine had

been extravasated; the penis had been gradually enlarging for the last twelve months; the scrotum was very much enlarged, and there were several ulcers and fissures leading to short sinuses, from which serous pus could be squeezed; he was naturally very much phymosed. On the 24th of November, 1845, a portion of the prepuce was removed, and a catheter introduced. Incisions were also made into the scrotum, which discharged a large quantity of pus. Compression was then made, which caused occasional diminution of the tumors, but it was impossible to effect a cure without the knife, and the patient's general health having improved the operation was decided upon. Mr. Brett thus describes it:]

One hour previously, seventy drops of laudanum were administered, in order to produce a sedative effect, and to obviate, in some measure, the shock of the operation on the system. The patient being placed on a table, as for the operation of lithotomy, the tumor was gently raised on the abdomen. Two superficial incisions were commenced, in the form of an isosceles triangle, in the perineum, the apex pointing backwards, extending through the integuments. The tumor was then turned down, and by its own weight and pressure suppressed hæmorrhage. A long and deep incision was then made, commencing from the external abdominal ring, and terminating at the inferior part of the right testis. The cord was exposed and isolated, and with the testicle carefully dissected out, and reflected on the abdomen. The same was effected on the opposite side, the operator being most scientifically assisted by Messrs. Lane, Pettigrew, Spitta, and others. A large lateral flap was then immediately formed on each side of the tumor, joining the corresponding sides of the isosceles triangle in the perineum, by a rapid thrust of the catlin. Assistants were in readiness to place their hands on the bleeding surfaces, and suppress hæmorrhage; the superior extremities of these last incisions were joined by one carried under the root of the penis, which organ being drawn up, the tumor was, with all due expedition, dissected off from the root of the penis and perineum. Pressure being still continued, a circular incision of the integuments of the penis above, about an inch and a half in advance of the pubes, was made, dissecting up just so much of the surviving healthy integuments. A rather bold longitudinal incision was now carried to the dorsum penis, taking care to avoid wounding the elongated prepuce (that part which Nature arbitrarily adapts to her purposes, whether of mucous membrane or skin), and having cleared away this morbid semi-cartilaginous mass, the prepuce was reflected, so as to meet the portion of healthy integument at the pubic extremity, there to be united by suture.

The operation being thus terminated in about ten minutes from its commencement, the divided surfaces readily admitted of adaptation. Interrupted suture, compresses, and a T bandage, terminated our efforts to relieve the patient from a disease which was a burthen to him. A quart of blood may be stated as the maximum quantity lost, which was chiefly venous. A gum-elastic catheter was introduced into the bladder, secured by a stopper, so that the urine might be carefully drawn off, and none fall on the wounds.

[In three weeks after the operation the patient was nicely recovering, and in a month's time the granulations had surrounded the protruded testicle, and nearly covered it. Mr. Brett published in the Lancet of February 28, 1846, an account of this disease as it occurs in the East, and he considers the pathology of this case similar to those he had frequently treated in India; only in this instance the disease was caused by a fistula in perinæo, whereas it generally originates in a local inflammation of a peculiar kind. Mr. Brett's conclusions are confirmed by the investigations of Mr. Quekett, who has submitted the tumor to microscopical examination. Mr. Brett observes:]

In the operations which have terminated unfavourably in this country, under the hands of some of our most eminent surgeons, the fatal result has

been attributed either to the shock of the operation or to excessive hæmorrhage. We greatly diminish the danger of the former by a large sedative, and by not sacrificing the organs of generation. The latter danger (excessive hæmorrhage) may be obviated by due precaution, by intelligent assistants, and by expedition, as well as by the position and mode of operation, I have endeavored to explain. The improvements of the operation over those which have so rarely been performed in Europe, are, I trust, obvious. The genital organs have always been removed with the disease; here they have been preserved: they have been almost invariably found in a normal condition, and healthy integument, as well as prepuce, has been found sufficient to cover these organs.

The operation has not escaped censure, on the following grounds: First, that it was "unnecessary, as that pressure would be found adequate to dispel the disease." To this I reply, that pressure had received a fair trial and failed, and it has never been known to succeed anywhere in these complaints. Secondly, it was said that the patient "would die of hæmorrhage." Thirdly, that "the disease would return." Fourthly, "that fistulous openings would be found to communicate with the urethra." It is only necessary to say, that all these objections have been abundantly disproved by experience in all my former cases, and in this particular instance. The plastic adhesion and cicatrization totally seals up the parts and puts an end to all further development of this benign class of fibrous parasitic growths. The patient was discharged a month after the operation; he returned in another month from his home, and was seen, by several medical gentlemen, in perfect health, and without a vestige of the disease. Need I further add, that he had been abandoned by his wife, from his sexual incapacity, and that he was totally incapable of pursuing his occupation. He is now restored to both; his health is improved and his organs are sound.

*Lancet, July* 11, 1846, *p.* 36.

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### 145.—TREATMENT OF HYDROCELE BY ALCOHOLIC FOMENTATIONS.

Dr. Pleindoux, of Nismes, relates the following case:—A wine-merchant, of Nismes, had been affected for a length of time with a considerable hydrocele on the left side of the scrotum, and for private reasons requested palliative treatment. A puncture was made on the 11th October, 1844, and more than a pint (demi-litre) of water drawn off. Nine months after a second puncture, simply to evacuate the fluid, was made. It then occurred to the patient to envelope the scrotum with a large compress, doubled four times, and steeped in alcohol of 30 degrees. This application, kept in its place by a suspensory bandage, was renewed every evening. The first effect was to produce great contraction of the scrotum. A slight sensation of cold only was experienced, which remained some minutes. These fomentations were continued forty days, and the patient was completely freed from his hydrocele, which has not returned during eighteen months. Having observed this fact, M. Pleindoux repeated the application on the first occasion which presented itself, and has now done so four times successfully.—*Encyclographie Medicale*, April, 1846.

*Monthly Jour. of Med. Science, June*, 1846, *p.* 436.

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### 146.—CURE OF HYDROCELE.

Dr. Alfred A. Harvey, of Bristol, has for thirty years successfully employed the following treatment in hydrocele, obtaining a radical cure without injection. His mode of treatment is as follows:—First, discharge the fluid with a trocar, or pocket lancet, and then apply a warm vinegar poul-

tice all over the scrotum, in order to bring on inflammation, which generally takes place in a few hours, and becomes painful. When sufficient inflammation has been excited, remove the vinegar poultice, and apply a bread and milk poultice; in a short time the pain and inflammation generally subside, and the cure is completed. Give a few smart doses of purgative medicine.—*Lancet.* *Med. Gaz, June 19, 1846, p. 1089.*

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147.—CASE OF RUPTURE OF THE BLADDER.—RECOVERY.—By W. CHALDECOTT, Esq.

[There are few cases of recovery from rupture of the bladder on record. The following case occurred in the practice of Mr. Chaldecott. At midnight, on the 7th of April last, a very respectable, temperate, and healthy man, after passing two or three hours at a concert ran across the street to empty his bladder; he came in contact with a post, the top of which hit against the lower part of the abdomen. Mr. Chaldecott observes:]

I saw him about half an hour after the accident. He was faint, and suffering severe pain over the stomach and belly, with desire but no power to pass his urine. I ascertained that none had escaped into his clothes, and my suspicions as to the nature of the mischief, were confirmed by the circumstance of nothing escaping through a full-sized catheter which was passed easily and completely into the bladder. He was placed in bed, and hot fomentations were used to the belly until reaction took place, with which came increase of pain over the stomach and abdomen. Twenty leeches were also applied; and I now passed a gum catheter, but with the same unsatisfactory result as before, not a drop of the urine escaping through it. I wished to have left the instrument in the bladder, but to this the patient strongly objected, and I urged it the less from some apprehension that in his restless movements the point might be forced through the wound in the bladder; the catheter was therefore passed every three or four hours, although up to two o'clock p.m., fruitlessly.

[The friends of the patient were apprized of the extreme danger of the case, and Mr. Key was called in. When he arrived, sixteen hours after the accident, there were most decided and alarming symptoms of peritonitis; the belly was painful, swollen, and tender; pulse rapid and feeble, and the countenance anxious. A catheter was passed, and nearly an ounce of bloody urine was drawn away. Mr. C. observes:]

At ten oclock, I gave him two scruples of liquor opii sedativus, which after a few hours produced some comfortable sleep; and about four hours from the time of Mr. Key's visit I again passed the catheter, and drew off about four ounces of clear urine. From this time, the pain, swelling, and heat in the stomach and abdomen gradually lessened, and it was evident that the bladder now held, as on each introduction the catheter brought away clear urine. From this time until the 13th (that is, the sixth day from that on which the accident happened), all went on well, excepting that a smart attack of gout occurred on the 10th, although the patient had never before suffered one; but on the 13th, from a strong desire to become independent of the catheter, he made straining efforts to pass his water, and he had scarcely passed a table-spoonful, when he felt (to use his own expression) something give way, and a burning pain all over his stomach and bowels, as if boiling water had been poured over them; and the same symptoms of faintness and distress occurred as when the accident first happened. I saw him within a few minutes of this re-opening of the wound of his bladder, for I could not doubt but such had been the consequence of his attempts to pass his water. On using the catheter, not more than a teaspoonful came through the tube. He had now again the symptoms of peritonitis, with the addition of incessant sickness. The same plan of treatment was again adopted—viz., fomentations, leeches, and a full opiate with calomel.

[In about four hours after, on the introduction of the catheter, urine was found in the bladder; and by passing the instrument for a fortnight, amendment gradually occurred; a second attack of gout came on, probably from the absorption of the urine into the system. Mr. C. makes the following observations on this case:]

The manner in which the accident happened, and all the circumstances and symptoms which followed it, were to me conclusive of the nature of the mischief. If anything could suggest a doubt about the rupture of the bladder, it was the very circumstance which makes the case remarkable—namely, the recovery. But to one who watched the case, no such doubt could occur; since it must be recollected that the bladder was known to be full at the time of the accident, no urine escaped into the clothes, nor did any come through the urethra for more than eighteen hours after, and then only about an ounce, mixed with blood. If, therefore, it did not escape into the cavity of the peritoneum, what else could have become of it? This case may range with many, in proof of what severe injuries the peritoneum may sometimes sustain, and the patient yet survive. Indeed, out of the evil of peritonitis, which usually renders this accident fatal, came the good of such an effusion of lymph, as no doubt glued the bladder where wounded to the contiguous viscera. The fact of gout occurring upon the absorption of the urine which first escaped into the peritoneum, and its aggravation upon its second extravasation, is interesting as connected with the pathology of that disorder. *Prov. Med. and Surg. Journal, July 22, 1846, p. 333.*

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## DISEASES OF THE SKIN.

148.—PORRIGO, &c.—By James Startin, Esq., Surgeon to the London Cutaneous Institution.

[This gentleman has lately delivered a course of lectures on cutaneous affections, which are highly interesting and practical. We would recommend a more detailed reference to them than we have here space to give. We have, however, abstracted some of the most practical remarks on a few of the most troublesome diseases which so often thwart the best attempts of the medical man; and first on the subject of Porrigo.]

Porrigo may be defined to be a form of contagious cutaneous disease, occupying chiefly the hair follicles, and characterized by a simultaneous, or successive eruption of pale, straw-coloured favous pustules, concreting into yellowish or brown cellular or cup-shaped crusts, which the microscope determines to consist of pus globules, and a peculiar vegetable cryptogamous growth, by the seeds or sporules of which the contagion is propagated. When these crusts are removed, in a chronic form of the complaint, a red, granular ulcer is exposed, presenting an irregular surface and somewhat circular form, which quickly becomes covered with a new incrustation; and this disease is most commonly found on the head and face, but any part of the body may be affected.

It will be perceived that this definition will not comprehend many of the forms of skin disease, which have been classified by Willan and his followers under the head of porrigo; but the fact is, this excellent author comprehended nearly every disease of the scalp under that appellation, whereas the porrigo furfurans, the P. scutulata, the P. larvialis, and the P. decalvans, belong to other affections of the skin, or, at any rate, the definition of porrigo must be completely altered if they are to be included under its characteristics; and psoriasis, ptyriasis, eczema, impetigo, and lichen would then be excluded from infesting the scalp, as those varieties of porrigo must be referred to one or other of these diseases, with the exception of the last, or P. decalvans, which must be classed under maladies attended with baldness, arising from diseases of the hair follicles or

bulbs, which, under the term alopecia, I shall defer to future consideration.

Porrigo may attack any age or part of the body, but it is most incident to youth; from its contagious nature the rich and the poor are equally liable to be its victims, whilst, as might be supposed from its origin, it is attended by no constitutional disturbance, at least in its earliest stages; but in habits of scrofulous or syphilitic diathesis, it may often be the exciting cause of constitutional derangements. I propose to consider porrigo as divided into three forms, which are called P. simplex or favosa, P. capillo-crustata, and P. ulcerosa; and the disease may be local or general, and manifest itself in the varieties termed sparsa, figurata, and inveterata. The first species, porrigo simplex, is the P. favosa of Willan; it consists in a scattered eruption of large, flattened, yellow pustules, which break on the slightest force, and give vent to a semi-fluid matter which rapidly concretes into loose cellular scabs, of a greenish yellow colour, surrounded with a slight blush of inflammation, as shown on the models, in one of which the disease is in the scattered, and in the other it is shown in the figured or grouped variety (the P. scutulata of Willan.) This complaint is most common in children, less so in adults, and very rare in advanced age; more or less irritation always accompanies the affection, and the constant pricking is apt to irritate the absorbents of the cutis, and occasion swelling and inflammation of the superficial lymphatic glands, which sometimes ends in suppuration. You will perceive the appearance the disease presents on the face, and also on the scalp, when the hair becomes matted together and forms an appropriate nidus for pediculi, which seem very constantly to rejoice in such quarters. It is supposed that the very faint and peculiar odour arising from this and other species of porrigo (which is more like that of mice than anything else, at least to my sense of smell), gave the name of porrigo to the complaint, from porrum, a leek or garlick; but this I believe to be fanciful, and rather think the Latin word, porrigo, to extend or spread about, will furnish a more reasonable derivation. It is not uncommon to see whole families suffering from porrigo simplex or favosa, and I have known nearly every individual in a school of young children thus affected; the irritation is sometimes so great in these young subjects, that a feverish state of the system may be provoked—this is particularly the case in scrofulous habits, and in ill-fed and badly clothed individuals.

The porrigo capillo-crustata is the porrigo lupinosa of Willan; it is beautifully exemplified by the cast to which I direct your attention, which you will perceive is characterised by the formation of dry circular scabs, of a dirty yellow colour, set deeply in the skin, with elevated edges, and a central cup-like depression, containing, as remarked by Dr. Gruby and others, the seeds of contagion in the form of sporules, produced from minute microscopic vegetation. The disease I have in several instances seen in parents and their offspring, not, however, as stated, from a "contagious," but a congenital cause; indeed, were I to state my own conviction as regards this species of porrigo, I should most distinctly disavow its contagiousness under any circumstances that have fallen beneath my notice. These crusts, you will observe, seldom exceed the size of the end of the finger, and they are irregularly circular rather than round; their first appearance is manifested by small clusters of favi, which soon commence the scabbing process, and in the advanced stages of the disease, an ulcer which has destroyed the roots of the hair, and produced an incurable baldness, is seated below the scabs. Any part of the body may be attacked with this species of porrigo, which, when advanced to its chronic stage, forms the next species; that I have called P. ulcerosa, in its nature not materially differing from the malady last described, save that ulcers filled with red uneven granulations, discharging a thick glutinous pus, are intermingled with the cup-shaped crusts. I may mention, as regards diseases

of the scalp, that the porrigo scutulata of Willan, is, in fact, impetigo figurata affecting that part of the body, as also for the most part is P. larvialis, an impetigo scabida, affecting the face, though it may also be eczema crustatum, whilst P. furfurans may be eczema furfurosum, or pityriasis, alphos, or rubra; hence I must refer to what I have stated when speaking of these diseases for the treatment and cure of these last-mentioned so called porriginous affections, yet the same rules may commonly guide you in the cure of all these maladies, whether belonging to the genus porrigo or any other; in fact, they may be said to be the connecting links in the chain, and, consequently, require no special treatment, but rather an adoption of general therapeutics, which may be equally applicable to both disorders.

The first procedure I would dwell upon as most necessary to success (I speak of course from my own experience), is to avoid all unnecessary irritation; do not use soap or apply cold lotions, or poultices, or narcotics, that by their absorption may occasion fatal effects, as tobacco, &c. Do not shave the head, but use scissors, cutting the hair as close as possible, and use all applications without force or friction, following the grain of the hair, and extract with the forceps those hairs only which are loose, and can be removed without pain. The directions I am in the habit of giving are as follows:—Soften the crusts, if necessary, by applying flannel wrung out of water as steaming hot as possible, without scalding or injury to the head, till the hair can be cut short with scissors, so that the root of every hair may be visible without touching the parts; wash the head with half of the yolk of a fresh egg and tepid water; dry it with a soft cloth, and anoint with an ointment adapted to the case, which, in porrigo should be a sulphureous application; in impetigo the iodides of mercury or of sulphur; in pityriasis calomel, white or red precipitate of mercury; and in eczema the bisulphuret of mercury, and sometimes the black oxide of manganese; all these ingredients may be combined with creosote, with camphor, &c., as well as variously intermingled, bearing in mind that the proportions of each article must not exceed ℈j. to ℥j. of lard, which is better than any oleaginous substance of which I have made trial. Of course the internal treatment must correspond to the nature of the particular affection, its stage, and the constitutional symptoms manifested. It will also be advantageous that the patient wear a light linen or silk cap, which is by no means to be rendered impervious to perspiration, but to be of a kind that can be washed daily; the lining of hats, bonnets, &c., must also be frequently cleansed and renewed. If these recommendations be attended to, I can assure you from my own experience, that a complaint which ordinarily lasts for years may be subdued in as many weeks or months.

*Med. Times, June* 20, 1846, *p.* 234.

*Acne.*—[Medical writers, of all ages, have found some difficulty in curing this peculiar form of eruption, but we are glad to find that Mr. Startin has been more successful; he first ascertains the exciting cause, and then applies those local and general means which increase the cutaneous circulation, viz., hot air bath, with or without sulphur; chalybeates combined with mineral acids, vegetable bitters, or iodine. He considers arsenic and mercury unnecessary, unless the state of the liver or other viscera indicate their use: he recommends a mild nutritive dietary, with such alcoholic stimulants as the stomach may require for producing healthful digestion; he considers vegetable acids, antiscorbutics, so called, and the common diet drink, worse than useless, nearly excepting even sarsaparilla.]

The external local treatment of acne is not the least important, and must be regulated entirely by the stage and condition of the disease. In its commencement, when a loaded state of the sebaceous follicles is the most prominent symptom, moderate frictions with the flesh-brush so as to keep open the pores, and the extraction by pressure, of the larger collection of sebaceous matter (the outlet of the follicle being dilated with some pointed but not too sharp instrument), will be required; whilst a weak spirit

lotion and the use of oatmeal, instead of soap, may be enjoined; as the disease advances, and the suppurating points are numerous, large and painful, the vapour douche on the face, mercurial ointment, with camphor, white precipitate with camphor, or the Topique contre acne of the Hopital St. Louis may be recommended: the latter is composed of slaked lime ℥i. zinc ointment ℥i. and camphor ℈i. From fifteen to thirty grains of the ioduret of sulphur to an ounce of lard, is also a useful application, as is a weak solution of bichloride of mercury in milk of bitter almonds, or thin quince-seed mucilage. The following lotion, not to be found in books, you will find occasionally very efficient: hyposulphite of soda, ℥j. to ℥ij., sulphate of alumina, ℥j. to ℥ij. rose water ℥viiss, cologne water ℥ss for a lotion, to be used by washing the part with a linen rag twice or thrice daily. Of course these proportions are not applicable in every case, but the composition is very useful in removing the unpleasant yellow stains of the cuticle as the acne declines, and it is perhaps more applicable to acne rosacea and pustulosa, than to the other varieties of the disease, as it always relieves the attendant itching. There are, perchance, few complaints which have at one time or other, produced so many nostrums as those under our consideration, and therefore I must refer the curious in such matters, to the authorities who treat on these occult subjects; but I may inform them en passant, that unless the nostrum be used with judgment, it is quite as likely to deceive as to relieve, not only in acne, but in every other cutaneous or general ailment; though the same remedy, properly and seasonably applied, may be among the most useful and beneficial.

It sometimes happens that we may have succeeded in the removal of acne, particularly acne rosacea, but that a degree of redness remains on the end of the nose, or on one or two spots on the cheeks, which, on examination, is not found to be inflammation, but a dilated state of the minute cuticular vessels; there are two ways of getting rid of this disfigurement, both of which I have constantly found successful; when the vessels are very small and numerous, not appearing to be nourished by conspicuously large trunks, the best plan is to paint them over very lightly with nitric acid, of the pharmacopœia strength, which is to be immediately blotted off with bibulous paper; by this means a blister is raised, and the cuticle detached after a few days, when it will be found that the morbid state of the capillaries has disappeared, or that they have so much contracted, that a second application at the end of a fortnight is all that is required.

The acetum cantharidis may also be used in a similar manner, though it is not so effectual. The second method has the same object in view, though the mode of its accomplishment is rather different, and it is only applicable when the red portions of integument appear to be maintained by the influx of several larger capillary trunks—a morbid condition, which at the end of the nose is exceedingly common. The plan I adopt in such instances is to divide each trunk in succession with the point of a fine lancet, and as the blood flows very freely, I restrain it by means of a small ring of steel or silver, which is mounted on a stem an inch or two in length, and fixed into a handle at right angles; by this means, I can, as it were, insulate the little wounded point, and arrest the hæmorrhage, whilst the blood can be sponged away and the incision exposed, so that a piece of lunar caustic, the size of a grain of sand, can be introduced into it, by means of a probe with a flattened extremity, on which it has been previously made to adhere; this at once stops the bleeding, and obliterates the vessel, whilst it produces no disfigurement, beyond a temporary black spot that may be covered with court-plaster, or the blackness may be removed, by wetting it with a solution of iodide of potassium; I can assure you I have cured numerous red noses by this simple procedure—which I may mention is applicable to the removal of small nævi and the congenital red marks called Arenœ (from their resemblance to a red spider, with its legs outstretched). The small mounted ring I am now holding, and which I have ventured to call "The

Ring Styptic," was made by Lings, of Jewin-street; this little novelty in surgical apparatus, you will also find a most useful agent in arresting bleeding from leech-bites, until a grain of caustic can be accurately applied as already mentioned. I have also used it with advantage in removing cutaneous tumors of various kinds, for surrounding a troublesome bleeding artery till it could be secured; the size of the ring may be varied, but I prefer it not larger than a quarter of an inch in diameter for general purposes; but I can imagine such a contrivance useful under a variety of circumstances requiring surgical interference, which it would be quite out of order to discuss at this moment—amongst such are deep wounds of arteries, whether the result of accident, injury, or surgical operation.

*Med. Times, Aug.* 1, 1846, *p.* 346.

*Sycosis.*—[Sycosis. says Mr. Startin, has its site in the sebaceous follicles of the face and head, which are perforated by the hair of the beard, whiskers, eyebrows, or scalp, and unattended with any necessary derangement of the general health.]

Sycosis has been considered by most writers of authority as a pustular disease, yet were it to be so considered, it would not be distinguishable from impetigo, or porrigo, affecting the same part of the body. I am therefore inclined with Bateman, to regard tubercles, as in acne, to be its more characteristic signs; and would consequently define sycosis as a non-contagious eruption of inflamed red tubercles, or vari, resembling those of acne occurring on such part of the face and head as are covered by hair (the precise seat of the disease being the sebaceous follicles permeated by the hairs). These tubercular spots may vary from the size of a grain of mustard seed to that of a pea, and may be confined to one portion of the beard, whiskers, eyebrows, or scalp, or be disseminated very generally through these parts; wherever situated, they speedily suppurate and produce a small yellow pustule, which is usually transfixed by a hair passing through its centre. These pustules break, coalesce, and discharge a sanious yellow secretion, which attaches itself to the hairs, so as to form greenish or sienna-coloured crusts; beneath which, in inveterate varieties of the disease, ulcerations are occasionally found; and it is observable in nearly every example of sycosis, that tubercles, pustules surrounding the hairs and incrustations, are to be simultaneously witnessed.

When the hairs plucked from a pustule of sycosis, are examined by the microscope, the extremity which was inserted into the skin is found covered with a pulpy matter, extending over the whole portion which was beneath the cuticle. I have not, however, so completely investigated this appearance microscopically, as was my intention before offering you these remarks; I trust, notwithstanding, to find leisure to do so shortly, and will then furnish you with the results.

It will be perceived from this definition, that acne differs from sycosis only in the implication of the hair follicle and bulb in the latter disease. The period of life is also similar to that in which acne, in forms of rosacea, and indurata, is commonly observed; namely, from twenty-five to fifty-five years of age. The subjects attacked are also similar, no condition being exempt, and irregular livers, or intemperate persons being commonly its victims. In females, the disease is only witnessed on the eyebrows and scalp. When existing on the chin and cheeks, if this ever be the case, it is not distinguishable from acne rosacea, by any characteristics with which I am acquainted. By a reference to the chart, you will perceive I have divided sycosis into four species, which, indeed, are but so many stages in the complaint; yet, as in other instances of cutaneous disorders, I have thought it well to institute this sub-division, that the exact period and aspect of the disease might be characterized, whilst the memory might be stored with its ordinary manifestations.

Thus I have marked the genera of sycosis, as S. simplex, which comprehends the tubercular erythematous condition of the eruption; S. pustu-

losa, when pustules are most evident; crustata, when scabs or crusts are most conspicuous, and ulcerata, for the rarer instances, where ulcerations may present themselves. The divisions are according to the position of the disease on the beard, or other parts of the head, named after Bateman and others, menti and capillitii; whilst the varieties relating to the form or continuance of the complaint, are entitled, sparsa, confluenta, and inveterata.

According to my own experience, sycosis commences, three times out of five, on the upper lip, immediately beneath the nostrils, by a raised tubercular erythematous swelling, which is attended with pain, heat, and pruritus, and soon becomes covered with red elevated points that end in small yellow pustules, which have a hair in the centre. The friction to which the patient usually subjects the part, and the effects of the heated and perhaps acrid breath, constantly passing over them, soon produce an extension of the eruption to other parts of the beard. The skin meanwhile assumes a deep red or violet tint, which is much increased by the use of soap and the razor, and the pustules multiply, till the whole hairy parts of the face, and more or less of the scalp may become affected. In other instances, this disease appears to commence in a similar manner to the above on some other part of the face, or it may, like acne, appear simultaneously on all the situations occupied by the hairs; while true acne exists on the cheeks, nose, and forehead; as the sycosis advances, considerable thickening and induration of the cellular tissue, beneath the skin take place, whilst the skin itself is much hypertrophied, so as to present the lobulated appearance also observed in acne rosacea. Modifications of this complaint from a syphilitic taint, or scrofulous diathesis, are of frequent occurrence, and will be hereafter separately mentioned.

Sycosis has been considered, even in modern times, a contagious disease, but this I have no doubt has arisen from its accidental complication with some other contagious cutaneous affection, as scabies or porrigo: with the latter of which complaints it is also not infrequently confounded—but the presence of tubercles, as in the models before you, and the origin and progress of the disease, will commonly furnish a sufficiently correct diagnosis. I am not aware that seasons have much influence in the production or development of sycosis; the malady is very prone to remissions and exacerbations, and the periods of the year which witness such occurrences, vary in different individuals afflicted with the disease. Tubercular syphilitic eruptions, and the disease called Ecthyma, which we are about to consider, have some faint resemblance to sycosis, when they attack the face, but the seat of these affections is not in the hair follicles, nor does the root of the hair usually manifest the same morbid changes when it may happen to be implicated; besides, those eruptions are rarely, if ever, confined to the only sites occupied by sycosis, but are to be found in various other parts of the body never infested with the complaint under consideration. The causes producing sycosis are even more obscure than those enumerated as influencing the eruption of acne, yet in some instances they are undoubtedly the same, and may be distinctly traced to disorders of the digestive or chylopoietic viscera. The complaint is frequently very rebellious, and has been considered by nearly all dermatologists to resist every kind of treatment, sometimes ceasing spontaneously after a few months' duration, but more commonly having a protracted existence for years, which, in a great measure, as observed by Plumbe, is owing to the local irritation of the hair, acting like a foreign body in the pustules, and continuing and propagating the morbid inflammatory action constituting the disease. You will perceive, from what I have now said, that I agree with the author just mentioned, in his observation "that the existence of hair on the part, and its consequences in aggravating the inflammation, form the only difference between sycosis and acne." (Plumbe Practical Treatise on Diseases of the Skin, p. 39, et seq.) With this view of the disease, I can only have one addition to make

to the treatment I recommended for acne, particularly for the species known under the designation of A. Rosacea; and this is, that as the hairs constitute the only distinction between one affection and the other, it becomes a rule, as conclusive as it is practically useful, that they should be extracted by a forceps from all the inflamed vari as fast as they appear; and thus the maladies will be rendered identical, and require only a similar treatment. As this operation is not only tedious, but painful, requiring also daily attention, it can scarcely be accomplished at once, when the disease is extensive, or when, as is often the case, it is accompanied with much incrustation and matting of the beard; it is better, in these instances, to wash and bathe the parts freely with yolk of egg and tepid water, and to use the convex-bladed scissors to shorten the beard or hair, and remove it with the adherent incrustations, when a small portion can be daily placed under the operation of the forceps, until every hair growing upon the inflamed portion of integument is scrupulously eradicated. Fomentations of decoction of mallows or poppies, of linseed, or of warm water, in which a little sulphur and bran have been boiled (in an earthen vessel), are very serviceable, both before and after this operation, and I would recommend the sulphur-vapour douche as a most valuable accessory.

This bath can be readily applied by means of any contrivance, at the end of the steam-pipe, which will exclude the nose, or as is the preferable mode, the whole face may be subjected to the sulphurous vapour, if the nose be provided with a tube for inspiration. With regard to the prognosis of this troublesome, painful and disfiguring complaint, I must again venture to place my own experience, and the results attending the practice at this institution, at variance with the observations of the authors, who have ranked acne and sycosis as amongst the most obstinate or incurable of diseases of the skin.

By paying attention to the extraction of the hairs, to the use of the scissors instead of the razor, and to washing and anointing the parts, after the manner recommended for acne in my last lecture (the use of the lancet and cauterization being also occasionally required), and the internal treatment directed as then advised, I have often succeeded in curing sycosis of twenty or thirty years' duration in as many weeks. If the cure has not been perfect in all instances, and if relapses have occurred from time to time, as in acne, yet do I believe that this disease is much more under the control of the medical art than many others which have no corresponding character for obstinacy and duration.

[The treatment consists of plucking out the hairs with a pair of forceps, and the application of a mildly stimulating ointment composed as follows:] White precipitate of mercury gr. xv., strong mercurial ointment, 3j. Liquor of acetate of lead 3ss., Recent pure palm oil, 3vj. This made a smooth creamlike application which suited the parts very well. To combat the general disorder, brisk acidulated saline purgatives were administered, which, when the desired effect was produced, were combined with a chalybeate.

[Also daily ablutions with the yolk of an egg and water, until the cure is effected.]

In one very severe case the disease had extended to the forehead, and all the hairy parts of the face, and so much hypertrophy existed in many of the diseased parts that the disfigurement was hideously great; the upper lip was quite lobulated, and a stiff yellow beard grew out of the surface, covered with fungoid-looking granulations that oozed a muco-purulent secretion. I had more leisure at that period than now falls to my share, and I spent many hours at different times in removing the hairs from this diseased mass, and in opening the tubercles when suppuration could be detected, anointing him with my own hands; in short, in carrying out the principles I have detailed. He took iron in various forms, but received the most marked benefit from the iodide internally administered, and iodide of sul-

phur externally, in the form of ointment (15 grains to the ounce of lard), by which conjoined means in two or three months he was perfectly freed from his disease, save that a few of the eyelashes seemed to have been permanently destroyed. *Med. Times, Aug.* 8, 1846, *p.* 369.

*Urticaria.*—When urticaria, in any of its forms or stages, can be traced to the ingestion of any substance, the removal of the offending body by emetic and purgatives, is the evident indication; on the other hand, when it is symptomatic of visceral disorders of any kind, these must claim our attention; and lastly, when the disease may be regarded as idiopathic, and no cause can be assigned for its appearance, its cure is to be attempted upon the principle I have recommended where the derangement of the cutaneous circulation has been productive of other maladies of the skin; for this end my experience has pointed to three remedies which have usually proved efficacious—these are, bleeding, when the pulse affords no counter-indication; colchicum combined with magnesian aperients and iodide of potassium. In a few rare instances where the malady has lingered and tormented the patient for years, I have had recourse to large doses of liquor potassæ, and small ones of Fowler's solution, with good effect; but this remedy is only admissible in these cases, and would appear to aggravate the acute manifestations of the disorder. *Med. Times, Sept.* 12, *p.* 464.

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149.—PORRIGO SCUTULATA (Willan.)—HERPES TONSURANS (Cazenave.)—By J. ERICHSEN, Esq.

[The following are the researches of Gruby on the disease called, by Willan P. scutulata, and by Cazenave, Herpes Tonsurans.]

On examining under the microscope a portion of hair, says Gruby, taken from one of the patches of this disease, we find that its tissue is filled with sporules, which are most generally round, but sometimes oval, transparent, colourless, smooth, and filled apparently by a homogeneous substance. These cryptogami take their origin in the interior of the root of the hair, in the form of a group of rounded sporules, from which beaded filaments gradually develope themselves parallel to the longitudinal axis of the hair, ascending in a straight line. In proportion as these cryptogami develope themselves in the interior of the hair, this becomes opaque, greyish, and dry, increasing in diameter, but losing its elasticity and cohesion to such a degree, that it breaks with the slightest force. Most usually the hairs break off at a distance of two or three lines from the surface of the scalp; the line of fracture is never clear, but always jagged and uneven, leaving a tuft of filaments that resemble closely a camel's hair brush.

Occasionally the hairs are broken off before leaving the follicle, the aperture of which becomes obstructed by indurated sebaceous matter. This sebaceous matter, Gruby remarks, being pushed forward by the growth of the hair, forms a small semi-transparent or opalescent elevation, composed of diseased and softened hairs, indurated sebaceous matter, and epidermic scales, presenting an appearance that has often been confounded with a vesicle or pustule. In proportion as the cryptogamic vegetations cease to be developed in the interior of the hair, these become more and more transparent, less grey, and more resistant, until their normal appearance is completely restored.

The cryptogami that are met with in the porrigo scutulata (tinea tondans, &c.) differ so remarkably from those that occur in the porrigo decalvans (alopecia) in seat, in mode of development, and in their relation to the tissue of the hair, that they cannot be confounded together. The cryptogami of porrigo scutulata are composed solely of large round sporules, arranged side by side like a string of beads. These are situated in the interior of the hair, and usually take their origin in the root, the exterior of the hair being unaffected. The cryptogami of porrigo decalvans (alopecia), on the

contrary, are characterised by having a number of curved or undulating branches with small sporules, attached to their sides. They are likewise situated on the exterior of the hair, round which they form a complete sheath.

[From these researches it appears that the name given to this affection by Cazenave is improper, since there are neither pustules nor vesicles essentially connected with it: they are merely accidental, and may or may not be present. Its contagious character is indicated by the cryptogamic vegetations described by Gruby. When this disease occurs where there is a family of children, it is important to be able to diagnose it in its early stages, so that its further progress may be arrested. There are three diseases with which it may be confounded, viz., favus, alopecia, and pityriasis of the scalp. We should always bear in mind that under no circumstances is there ever in porrigo scutulata any appearance of vesicles or pustules, except as the results of accidental irritation. What has been mistaken for them is indurated sebaceous matter and epidermic scales. Willan fell into this error, as is evident from plate 2, in his treatise on skin diseases. Cazenave has described vesicles in this disease, but from the researches of Gruby it is evident he is also in error. Mr. Erichsen observes:]

Gruby is correct in describing the disease as being characterised by the presence of circular patches covered with a dry, mealy, white powder, and attended by a breaking short of the hairs; as being indeed, a perfectly dry disease. Porrigo scutulata, then, makes its appearance in the form of a small circular patch, of a tolerably regular form, distinctly raised towards the margin by an accumulation of epidermic scales. The hairs covering the patch are thinned, irregular, and loose, being readily detached when pulled upon; and after a time they break off at a short distance from the scalp. There is usually a good deal of itching and irritation about the affected spot. On the head being shaved, the patch will present a slightly red and inflamed papulated appearance. The disease is, in this stage, perfectly dry, and presents no appearance whatever of vesicle or pustule. If, however, it be much irritated, it will lose this simple circumscribed form, and will put on a much more inveterate character. The scalp will become glazed, red, inflamed, and covered with loose epidermic scales; it will be denuded of hair, and may become studded with impetiginous pustules, containing a thick, glutinous, yellow matter. These pustules never make their appearance but at an advanced stage of the disease, as a secondary affection, usually the result of the irritation to which the scalp has been subjected: many cases run their course without any appearing.

At the same time that the disease presents this character on the scalp, it is very common to notice similar circular, red, scurfy patches on the forehead, neck, temples, back, and arms. These have been confounded by Bateman and others with herpes circinnatus, and have consequently been supposed to differ from the true contagious ringworm of the scalp. Their real character was, however, long ago pointed out by Plumbe, who showed clearly that they were precisely of the same nature as the patches affecting the scalp, "the apparent difference being solely the result of the mischievous influence of the hair," and who, in proof of this, relates the case of a lady, "who, from two of the circular spots on the arm, inoculated one of her children with the genuine ringworm of the scalp, the disease afterwards affecting several other children of the same family." The precise converse of this has very recently fallen under my notice in the case of a lady who contracted one of these "circular red scurfy blotches" on the back of the hand, from a relative who was labouring under true porrigo scutulata of the scalp. If the characters that have just been given as distinctive of porrigo scutulata be borne in mind, its diagnosis from favus, the porrigo lupinosa of Willan, will not be attended with much difficulty.

In favus there are always, even in the earlier stages, a number of circular, cupped, yellow, or yellowish-grey incrustations; at first small, but after

a time acquiring a larger size, and always traversed by a hair. These crusts are always most distinct, and cannot be confounded with the patches of porrigo scutulata, on which, as it has already been stated, there are no incrustations. Favus, likewise, is an exceedingly rare disease in this country, whilst porrigo scutulata is of common occurrence. With alopecia circumscripta, the porrigo decalvans of Willan, there is perhaps more danger of confounding the disease now under consideration. The smooth irregularly-shaped perfectly bald patches of the one may, however, be readily enough distinguished from the circular spots, covered with broken hairs and white powdery scales, of the other affection. From pityriasis the diagnosis of porrigo scutulata is likewise very easy, there being no tendency in the former disease to a breaking short of the hairs, or for any baldness, even of a temporary character, to result. In no disease of the skin is the treatment, in most instances, attended by less satisfactory results, and in none is greater patience required by the medical attendant, than in porrigo scutulata. To this general statement there are, of course, many exceptions; but as a general rule it will be confirmed by the experience of every medical man.

The treatment of porrigo scutulata is of two kinds, varying essentially both as to the end that we wish to obtain, and the stage of the disease; the object of the first kind of treatment being to arrest the disease at once in its earlier stages, that of the other being to modify the action of the integument, where the disease has become chronic, in such a way as to enable it to revert to a healthy condition. The following is the plan that I am in the habit of having recourse to, and that will, I think, in most instances, be found to be successful.

The first thing to be done, when a child is found to be affected with one or more patches of porrigo scutulata, is to shave the head without delay, in order that the extent of disease may be known, and that it may be more conveniently brought within reach of proper treatment. The diseased patches should then be touched with one or other of the stronger acids, so as, if possible, to cut the affection short at its very outset. Plumbe preferred the sulphuric acid, and this is no doubt a very excellent application when used lightly, and with moderate care, by means of a feather, as he recommends. I have given both the sulphuric and nitric acids a trial, but prefer in general the concentrated acetic acid, as originally recommended by Dr. Wigan (Medical Gazette, vol. ii. 1842-43, p. 864.) Before having recourse to this, it will be well to follow the very excellent advice given by that gentlemen of *testing* the shaven scalp by washing it with a lotion composed of one part of the strong acetic acid to three of water; in this way a number of spots, which would otherwise have been overlooked, may be detected by their becoming reddened. The concentrated acetic acid should then be applied for a few minutes to each spot, as recommended by Dr. Wigan, by means of a piece of sponge tied to the end of a stick, or held by a pair of forceps. Used in this way the acetic acid is a more manageable and agreeable preparation than the sulphuric or nitric: possessing the additional recommendation of dissolving the cuticle, and thus readily coming into contact with the subjacent diseased parts. The mineral acids, on the contrary, char and harden the cuticle, and do not penetrate to a proper depth, unless they be applied so freely as to give rise to danger of proving a slough. The acetic acid applied thus, occasions pretty severe smarting and burning, which lasts for a few minutes; this is followed by reddening of the part that has been touched, the diseased cuticle becoming opaque and whitened, or raised up into small vesications. After the patches have been freely and effectually touched, nothing more should be done to them for a week or ten days. When the crust that has been produced by the action of the acetic acid upon the epidermic scales, diseased hairs, &c., has been raised off the scalp by the growth of new and probably healthy hair; this should then be removed, as Dr. Wigan recommends, by means of a

pair of fine scissors, and the subjacent integuments carefully examined by means of a lens. After having been well washed with soap and water, should there be any appearance of disease still existing, the acid must be reapplied. Should the part present a healthy appearance, or be merely reddened in consequence of the irritation that had been set up in it by the acid, nothing will be required beyond simple ablution with tepid soap and water, and the application of a little olive oil every night. Before pronouncing the disease to be effectually eradicated, the surgeon should never omit to examine carefully under the microscope some of the newly-formed hairs growing from the patch that had been affected, in order to ascertain whether they contain the characteristic sporules, or vegetable organisms, that have been described in an early part of this paper. This rule should never be departed from, as it is impossible to pronounce the patient cured until this point be ascertained; and the application of the acid should be continued until the hair when removed, or the cuticle when scraped off, no longer presents, when subjected to the microscope, any of the appearances that are so characteristic of this disease. Indeed, when once acquainted with the true nature of porrigo scutulata, the rationale of the beneficial action of the stronger acids becomes obvious, consisting simply in the destruction of those vegetations that are the essential cause of the disease, and which, unless destroyed by the application of a powerful caustic, may keep it up for an indefinite period. This consideration will explain the almost invariable failure of merely stimulating applications, such as irritating ointments, hellebore, savine, elemi, pitch plasters, &c., which can exercise no destructive influence on the morbid growths that essentially constitute the disease.

After the acid has been continued until the whole of the vegetable organisms have been destroyed, and not till then, we may have recourse to such applications as will stimulate the integuments to a more healthy action, and thus prevent the reproduction of the disease. Amongst these I have generally found the most useful to be either the creosote ointment in the proportion of 3ss. or 3j. of the creosote to an ounce of lard, or the tincture of iodine applied by means of a camel's hair brush. The unguent. hydrarg. biniodid. diluted with six parts of the unguent. picis liquid, or a mixture of equal parts of sulphur and pitch ointment; or the carb. of potass ointment in the proportion of from 3ss. c. 3j. of the salt to the ounce of lard, are also frequently very serviceable. Whichever of these applications be employed, and an alternation of them is perhaps the most useful, the parts should be well washed three or four times a day with a lotion of the sulphuret of potass dissolved in lime water, either alone or in combination with the carbonate of the same alkali, or with soft soap.

[We should at the same time attend to the general health; if the child be of a relaxed fibre or scrofulous, as is often the case, he should have a very nutritious diet, and a mild corroborative plan of treatment. In chronic cases, some of the preparations of iron with iodine, and quinine either alone or with quassia, will be found beneficial. Cod liver oil has been recommended, but Mr. Erichsen has never seen any good result from its use. All heating and salted articles of food should be prohibited, and a nutritious but plain regimen enjoined. Mr. E. observes:]

It by no means uncommonly happens that a few weeks after the porrigo scutulata has been cured, an impetiginous affection makes its appearance on the scalp; this is more especially liable to occur if the child be allowed to take too salt or stimulating a diet, or if in any other way his health be deranged. This affection must be treated in the same way as impetigo of the scalp proceeding from other causes, and will, though in certain constitutions assuming a somewhat intractable character, most generally soon yield to the employment of an emollient or but slightly stimulating local treatment. *Med. Gaz., June* 19, 1846, *p.* 1072.

150.—CASE OF PORRIGO PUDENDI.—By J. C. Evans, Esq.

[This patient was a stout, healthy looking, plethoric little woman, about forty-six years of age. She ceased to menstruate about eighteen months ago, soon after which she began to feel occasional itching and smarting pain about the pudendi when she got warm in bed or stood before a fire. The last three months the pain has become so intolerable she could not endure it; she was obliged constantly to get out of bed, and apply cold cloths to the part. There were a few papulæ of a bright red colour on the pudendi and inside of the labia. The surrounding parts were dry and hot.]

*Treatment.*—Took eight ounces of blood from the arm, from which she derived almost immediate relief. Four grains of calomel and six of compound extract of colocynth, to be taken directly, followed by a table-spoonful of the following mixture every four hours:—Nitrate of potash, 3j.; sulphate of magnesia, ℥j.; camphor mixture, ℥vj. Mix. The lotio plumbi to be kept constantly applied to the vulva. Passed a very comfortable night; bowels have been open several times; pulse less rapid; less thirst, and skin cool. To continue the mixture (omitting 3j. of the sulphate of magnesia) and the lotion. Under this plan of treatment she soon recovered her usual health; but when her bowels become confined, or when there is any irregularity in diet, she always has a return of it. A lotion containing two grains of the bichloride of mercury, and two minims of hydrochloric acid in an ounce of water, has been substituted for the lead lotion. The strength has been increased to five grains of the bichloride and five minims of the acid to the ounce. By attention to the state of her bowels and diet, she is, although not entirely rid of the disease, able to go about, and attend to her affairs.

*Med. Gaz., July* 17, 1846, *p.* 113.

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151.—ACNE, &c.—By Thomas Hunt, Esq., of Herne Bay.

[Mr. Hunt has given us several very excellent papers on different cutaneous affections, which the reader will find in the *Lancet* for 1846, vol i., pp. 32, 77, 125, 271, 385, 543, 597. We subjoin those on acne and lupus. We may, however, here say that in lepra, psoriasis, lupus, acne, eczema chronica, impetigo, prurigo, lichen, and in all chronic affections of the skin, which are not venereal, nor dependent on local causes, his mode of treatment which has certainly been very successful, consists in first reducing inflammatory action (if it exist) by depletion and antiphlogistic regimen; then in administering arsenic, beginning with five minims of the liquor potassæ arsenitis, three times a day, with the meals, until the conjunctivæ are inflamed, then reducing the dose to four minims, keeping the eyelids slightly sore and weeping. Mr. Hunt states that the whole success of this treatment depends upon the continued use of the medicine, which is harmless when administered with vigilance, and with the above restrictions.

*Acne simplex.*—Mr. Hunt mentions a case of acne simplex, in a girl, nineteen years of age. It was situated on the forehead, chin, upper lip and cheeks; she had suffered from it for three or four years. She was ordered five minims of the liq. potass. arsenitis, three times a day with her meals; at the end of three weeks she was quite well. He also gives a case of the variety of acne known by the name of indurata, in which five minims of arsenite of potash were taken three times a day for three months, without either affecting the disease or producing any unpleasant symptoms. Soon after this, continuing the arsenic, she began to improve, and in other three months she was quite well. She took occasional purgatives. The disease was of seven years standing. Acne rosacea appears to be an inveterate form of the simplex, remarkable on account of its locality, and occurring not at the age of adolescence, but rather at the decline of life, commencing at the middle period; it is not confined to dram drinkers, but is equally common to persons of abstemious habits. This form of disease is very difficult to treat. Rayer regards it as incurable; and probably it is so in the

drunkard, and in those cases which are hereditary or congenital; where there seems irritation from one extremity of the intestinal canal to the other, there being coexistent hæmorrhoids and an irritable condition of the rectum. Dr. Chambers has given the history of a case in which arsenic proved most beneficial, and we subjoin it:]

Mrs. N——, a lady of temperate habits, clear complexion, and good general health, had been complaining for some weeks of languor, lassitude, headache, hysterical globus, and chronic diarrhœa. These symptoms were treated variously, but with but little success for a time. At length, on the right ala of the nose, a small number of accuminated pustules appeared, elevated upon an inflamed base, and having the genuine character of acne, but more closely crowded together than they usually are in that disease. These soon became covered with a purulent incrustation; other pustules appeared in the neighbourhood, until at length the whole ala, with a contiguous portion of the cheek, became occupied by the disease, and presented an ugly and hypertrophied appearance. As a portion of the crust became separated, other pustules appeared underneath, and a second crust was formed, which, when detached, discovered other formations, on a larger base, and involving a deeper portion of the sub-cutaneous tissue. There was no pain or itching, and, except on approaching the fire, no sensation of heat. The crusts were surrounded by a small areola of a dull-red colour, rather inclined to a brown shade, but never exhibiting the livid colour of lupus, which disease it nevertheless, in some respects, resembled.

Dr. Chambers saw the case within two or three months of its commencement. He pronounced it acne rosacea, gave a guarded prognosis, and prescribed arsenic, of which the first dose was taken on the 3rd of January, 1844, and continued, on the plan detailed in the preceding cases, for three months, by which time the disease had entirely vanished, and the hypertrophied cellular tissue was reduced to its normal condition. Any doubt which might have been entertained concerning the agency of the arsenic in the cure would have been dissipated by the ultimate history of the case. The patient now left her home "for a week";—was actually absent five weeks, neglected her medicine, and returned home with another tuberculous incrustation, which, commencing on the original spot, had now spread more horizontally over the cheek, and seemed to take a more superficial hold of the integuments than the former attack.

May 10th. The arsenic was now resumed, and taken steadily, till the middle of July. Before the end of May, however, the disease had again disappeared. The medicine was persisted in for two months subsequently, with a view to prevent a return; notwithstanding which precaution, the disease was only kept at bay for twelve months, not radically cured; for in the following July (1845), the old enemy reappeared, evidently, however, in a milder form than heretofore; for now the arsenic put him to flight in ten days, and was steadily persevered in for two months afterwards. At present there appears no probability of a relapse. A considerable indentation, like a bad variolous scar, was left by the first attack: the latter attacks left no scar. The diarrhœa, headaches, and hysterical affections, retired as soon as the arsenic had hold of the system; and the patient has enjoyed excellent general health since the termination of the first course. The conjunctiva became affected as usual, synchronously with the subsidence of diseased action, both local and constitutional. No external application was used, nor any potent internal medicine, after the first exhibition of the arsenic.

The reader's attention is particularly solicited to three observations suggested by this interesting case:—1. The decline of the disease, on three distinct occasions, under the steady use of arsenic alone, independent of external applications, changes in diet, or other circumstances of regimen; its repeated relapses after neglecting the medicine for a few weeks, and its (probably) final disappearance, after such a protracted course of reduced

doses as seemed to destroy the very tendency to morbid action; these circumstances demonstrate the absolute control which this wonderful medicine exercises over tubercular diseases of the skin, and holds out a strong encouragement for its lengthened trial in cases of longer standing. 2. The morbid condition of the nervous system, and the extreme irritability of the intestinal canal, in circumstances which would generally be held interdictory of the use of arsenic, were, in this case, not less clearly relieved by the arsenic, than the cutaneous affection itself. 3. The resemblance of this case to lupus, both in the locality primarily affected, and in some similarity of general appearance and history not easily described, seems to suggest, if not establish, some relation between this disease and certain forms of acne rosacea; and if it throws no light on their cause and origin, it indicates a morbid condition of the general system, susceptible of successful treatment by a similar alterative plan. The writer has further the satisfaction to state that he has had an opportunity of carrying out this indication with the most entire success, in a case of lupus exedens, of many years' standing, the particulars of which will hereafter be presented to the reader.

The two varieties of acne which have now been discussed belong properly, or principally, to two distinct and distant periods of life, respectively—viz., acne simplex, to puberty; acne rosacea, to the meridian or decline of life. There is a third species appertaining to the intermediate years, and seldom met with, either in the morning or the evening of human life. And whereas the principal seat of acne simplex is the forehead, and of acne rosacea, the nose, the variety now under review occupies only those parts of the face which in the male subject are covered by the beard. It is known by the name of Sycosis, or mentagra.

[This affection is not confined to the male sex; it is more common, indeed, in the female, but for obvious reasons it occurs in males in its worst form. The disease is confined to the chin, cheeks, upper lip, and submaxillary region. Its cure is difficult. Some have recommended that every hair should be plucked up by the root; but as the cause is constitutional, its cure cannot always be affected by local means. Arsenic is here again mostly to be depended upon, with proper attention in keeping the parts clean. Mr. Hunt relates the case of a young lady who was affected by this disease; it had existed for three months when treatment was commenced. He says:]

No external application was used, but the following medicine was prescribed—viz., Fowler's solution, one drachm; distilled water, seven drachms—mix. Forty minims to be taken thrice a day in the beverage usually taken at meals.

June 30th.—The pain has left her. She sleeps well, and is looking better. The eruption is fading, and the skin is paler, and less occupied by small points. Slight conjunctivitis. The dose of arsenic was reduced to four, and afterwards to three minims of Fowler's solution.

Aug. 1st.—The eruption has quite disappeared. She has had no relapse of the neuralgic pain, and is in perfect health.

[Mr. Hunt also describes another case, a lady, twenty-seven years of age, who was affected with sycosis; she was also affected with dyspepsia. The latter affection was treated for a fortnight with aperients and alkaline tonics, and a solution of bichloride of mercury applied to the face; there was no improvement in the eruption, and but little in the dyspeptic symptoms. He adds,]

The arsenical treatment was commenced on the 17th of August, 1845, and in little more than a week the stomach had resumed its healthy tone, and the skin was nearly well; but she neglected the medicine, and before the following Christmas both complaints returned, and are again yielding to arsenic. Both of these patients were of mature age, and had been free from the cutaneous affection at the age of puberty. The skin of the forehead was sound, and the disease was somewhat more acute in its charac-

ter than acne simplex. It commenced too early in life for acne rosacea; besides which, the nose escaped entirely. The disease was therefore mentagra, or, more probably, acne menti. In both cases, the disease, with its respective complications, yielded readily to arsenic. Not a doubt can be entertained of the constitutional origin of this disease; and calm reflection on the primary characters of sycosis in the male sex, will lead the observer not only to identify the disease with acne, but to perceive the necessity of prescribing an alterative course in connexion with local applications. The writer regrets that he has not as yet had an opportunity of giving this kind of treatment a trial in that aggravated form of disease which is peculiar to men, but he cannot entertain a doubt as to the issue.

*Lancet, May* 16, 1846, *p.* 543.

*Lupus.*—[Mr. Hunt says on this subject, there are two varieties of lupus described by Rayer—lupus exedens and lupus non exedens.]

The first of these ulcerates from the surface inwards, and leaves deep excavations; the second spreads and ulcerates horizontally; the third rarely ulcerates at all. The two latter are tubercular diseases, and are comparatively rare in this country. The former, lupus exedens, or noli me tangere, is a frightful disease, difficult of cure, and when cured, leaving behind it more or less of deformity. To this disease the writer will at present confine his observations. He is disposed to agree with Mr. Plumbe in doubting whether this form of lupus is strictly of tubercular origin. It is, in fact, a chronic cutaneous inflammation of a peculiar character, at once indolent and irritable, but often for a time devoid of pain; of a livid colour, commencing generally in a small portion of the ala of the nose or the circumference of the nostril, and speedily tending to phagedenic ulceration. The ulcers are covered by dirty-looking adherent scabs, which, on desquamation, discover a surface moistened by a glutinous exudation, soon drying into a new scab; and this, on its separation, disclosing deeper excavations, until not only the subcutaneous tissues, but eventually the cartilaginous structure of the nose is eaten into. The disease commonly extends to the upper lip, and the gums of the upper jaw. The whole of the nose, upper lip, gums, and incisors of the upper jaw, and even portions of the bone, have been known to be sacrificed to the ruthless invader. The lower eyelid and the commissures of the lips are sometimes respectively the seat of lupus exedens, the ravages of which produce suffering and deformity not less deplorable than lupus of the nose.

The causes of this horrible disease are utterly unknown. Its subjects are commonly young and previously healthy women, from the age of sixteen to thirty. The diagnosis is not difficult; but through the too general neglect of the study of cutaneous diseases, and the consequent ignorance of the symptoms of well-defined and specific diseases, the repulsive malady has very often been most inexcusably confounded with syphilis, and the disease has been aggravated by mercurial salivation. In syphilis there can always be traced, at least, a concatenation of secondary symptoms previously developed, and the disease usually commences from within, the cartilages suffering first; and the ulceration, when it appears, has a character of its own, quickly appreciated by the experienced eye. In lupus, on the contrary, the disease appears in persons who have generally enjoyed good health, and in whom neither primary nor secondary symptoms have ever appeared: it first appears in the skin, which is not copper-coloured, but livid. The prognosis is generally as melancholy as the disease is horrible. The writer has sought in vain, both in books and hospitals, for a single case in which its ravages have been actually and permanently arrested; although, here and there, allusions to cures are found in books. Precepts for its treatment are sufficiently plentiful; but demonstration of their utility is lacking.

[Mr. Hunt gives the case of a female who was affected with lupus exedens for nine years: it had been mistaken for secondary syphilis. On the

5th of January, 1837, Mr. Hunt describes her case as follows: The tip, both alæ, and part of the septum of the nose are already eaten away; the four incisor teeth of the upper jaw are gone with a portion of the upper lip and jaw; the breath is offensive, and her voice has a nasal twang; there is severe burning pain in the part, and she cannot sleep. He adds:]

The parts were ordered to be dressed with a pledget of pure fresh spermaceti cerate, thinly spread upon fine lint, simply to protect them from the oxygen of the atmosphere, and from sudden changes of temperature, no other application being used. Five minims of the liquor arsenicalis were ordered to be taken with the meals thrice a day, which dose was persisted in with exact regularity for three months, when the conjunctiva became affected. The dose was then and afterwards reduced as occasion required. This plan was uninterruptedly pursued for two whole years, the disease, meanwhile, advancing as heretofore, but she at length experienced some alleviation of the pain. The action of arsenic is slow but sure.

January 30th, 1839.—She has now lost all pain, has regained her flesh, spirits, and good looks, and has undisturbed rest, but there is no appreciable improvement in the ulcerated surfaces. The disease has committed visible ravages since the commencement of the arsenical treatment, but the patient fancies it has been "at a stand-still" for the last few weeks.

January 12th, 1840.—She has now steadily persevered in the arsenic for three years. The conjunctiva has been more inflamed "latterly," but the skin of the nose, lips, and gums, is perfectly whole and sound. No traces of ulceration or scaliness are visible, but there are ugly cicatrices and scars, with great loss of substance, and the contaminated breath suggests the idea of disorganized cartilaginous structure.

March 2d.—There is no visible trace of existing disease in the nose, lip, or gums, but the breath is still offensive. She thinks she has taken cold, and complains of pain in the chest, dyspnœa, and hard dry cough. There is a croupy hoarseness, as well as a nasal intonation in her voice. Pulse 96, firm; skin hot and dry. Fourteen ounces of blood were taken from the arm; aperients, salines, and low diet; discontinue the arsenic.

April 10th.—Quite well, with the exception of foul breath, and nasal tone of voice. No medicine prescribed.

[August 3d.—She had taken arsenic for nine months. The ulcer was returning, but it was not so foul and unhealthy in character. The arsenic was resumed in small doses, and continued for a month. On the fifth of September, the skin was healed, and its surface looked healthy. January, 1841.—The arsenic was continued until this time, and it was now discontinued. Mr. Hunt observes:]

After this patient had taken the arsenic about twelve months, a brown, dirty, and mottled appearance of the rete mucosum was observable, first on the legs and thighs, then at the end of the second year, on the trunk of the body, and ultimately on the arms and neck, the face only escaping. This disappeared gradually, without desquamation, after the medicine was abandoned. The writer is not aware that this effect of arsenic has ever before been recorded.

In this extraordinary and highly satisfactory case, the controlling power of the arsenic is so perfectly demonstrated by repeated experiments—the disease uniformly advancing when the medicine was withheld, and as uniformly receding under its influence, until the very tendency to diseased action was absolutely destroyed under its continued use—that no comment can add any force to the facts. The concurrent testimony of writers on the skin to the improvement of the ulcers of lupus under the topical use of arsenic, is worthy of notice in connexion with this case. The object for which arsenical applications are recommended, is to check the destructive process of the ulceration by exerting a new action on the surface. Is it not more probable that the temporary benefit derived from the dressing, is

attributable to the absorption of arsenic? Mr. Plumbe seems to be aware of the influence of the internal use of arsenic in lupus, but he does not tell us that he ever succeeded in curing the disease by it. The cause of his failure is unconsciously confessed in the following sentence:—"It is proper to *increase the dose gradually*, till some manifestation of tendency to disorder of the stomach and bowels occurs, when it should be *entirely withheld*, and purgatives, with opium, substituted, till such symptoms have subsided." I have marked in italics certain words in the preceding extract to indicate the rock on which practitioners generally split in the administration of this medicine. The writer has administered arsenic in hundreds of cases, but has never observed the slightest tendency to disorder of the stomach or bowels, because he has invariably reduced the dose before it has done any mischief; and probably mixing the medicine with the food, has protected the stomach and bowels from injury. It is strange that some writers advise it to be taken on an empty stomach. It may not be unadvisable to repeat, that the curative properties of arsenic will always be found to reside in doses too small to be mischievous.

In reflecting upon the uniform success which has attended the right use of arsenic, in the treatment of a great variety of diseases apparently so unlike, one is naturally led to inquire—how does the medicine act? and, what points of coincidence are apparent in this motley group, which may be supposed to indicate uniformity of treatment? To these questions, full of interest as they are, the writer does not feel himself in a position to hazard a reply. His present object is to direct the attention of the profession to a series of facts, rather than to risk their value on the hazard of a speculative theory. It is certain, however, that there must be something in all these cases constitutionally wrong, which the arsenic has the power to rectify. In several of them, there was no manifest deviation from health, functional or structural, in any organ, save the skin. It may therefore be inferred, as a corollary from the above results, that local diseases may, and often do, indicate a cachectic condition of the circulating fluids, where there is neither any apparent deviation from healthy vascular action, nor any palpable abnormal tone in the nervous system. Beyond this, it is difficult to carry our inquiries. It is hazardous to deduce pathological conclusions from therapeutical facts, especially from those which are limited to a confined range. But the field is open for further experiment. It may turn out, at last, that arsenic, though all-sufficient, is not essential to the cure of these diseases. There are other alternatives, probably, of equal power, if not of equal promise, which have never yet been tried methodically, or with sufficient care and nicety, to test their value.

It is now many years since the writer resolved to try what could be accomplished by arsenic in the treatment of the more unmanageable disorders of the skin, and he confesses himself astonished at the result. He has little acquaintance with other remedies beyond his knowledge of their general inefficiency. He has abjured medicated baths, ointments, and lotions, and, excepting for the purpose of reducing imflammatory action where it existed, he has placed no restriction upon diet. Moreover, he has, in almost every protracted case, allowed the arsenical course to be interrupted again and again, and generally found he could check the disease, or allow it to advance at pleasure. In this way he has had the satisfaction of establishing the value of this one medicine beyond the possibility of doubt and the reach of cavil, and by illustrating the efficacy of small doses, and thus securing for the medicine an innocuous operation, he has removed the only valid objection to its use—namely, its dangerous properties. Still nothing would give the writer more pleasure than to hear that any one of his brethren had discovered by sure induction, a remedy less objectionable than arsenic, but equally potent in its control over these disorders. This, however, is scarcely to be expected. A medicine which, besides being almost certain in its operation, is safe, cheap, and tasteless—which can be taken at

mealtimes, through a whole life, if necessary, generally without creating disgust or nausea—which interferes, in curative doses, with no healthy function—which gives no pain and inflicts no inconvenience—has surely recommendations which are not easily surpassed. There are two or three circumstances connected with the history of the preceding cases which ought not to be overlooked.

1. Especial care should be taken to insure the purity of the medicine. The necessity of attention to this point is more palpable than may appear at first sight. One would think that a medicine so cheap as arsenic would scarcely be adulterated, and that its well-known poisonous properties would always secure a careful and accurate preparation of its formulæ. It is a fact, however, that the arsenious acid (oxide of arsenic), as sold in powder, is very commonly adulterated with sulphate of lime, and although it is difficult to make the Fowler's solution of such materials (inasmuch as the gypsum being insoluble in the solution of carbonate of potash, the former will always appear as a precipitate), yet, that the solution is sometimes prepared in this way, or otherwise adulterated, is more easy to believe than that such enormous doses may be borne with impunity, as are said to have been administered. The solution used in all the preceding cases was procured from Apothecaries' Hall, and its operation has been found, at least, as uniform as that of medicines in general.

2. The cases were, for the most part, treated by the sea-side. Whether the influence of a marine atmosphere, or of mere change of air, may account in part for their successful termination, must be left an open question, to be decided by future experiment; but it is right to mention that most of the patients were so circumstanced. Lastly. Having pointed out an eligible method of bringing to a happy termination these annoying and loathsome maladies, the author feels that there is yet an ulterior and very momentous question to be decided, before these results can be contemplated with entire satisfaction.

There prevails in the profession, as well as among the public at large, a suspicion (to say the least) that some of these diseases cannot be safely cured at all; that morbid affections of the skin, though severely afflictive, sometimes exercise a salutary influence upon the system at large, acting as wholesome and natural drains or safety valves, to the vascular apparatus, and thus, by their timely or continuous action, preventing the accession of still more serious forms of disease, probably involving the vital organs, and sometimes even endangering life. *Lancet, May* 30, 1846, *p.* 597.

[Mr. Gibb, house-pupil at the Newcastle-on-Tyne Infirmary, has reported the treatment of an inveterate case of lupus, in which, after the use of various remedies, the application of powdered arsenic and calomel proved very useful, together with the internal administration of the arseniates and iodides. The naphtha ointment, which was at one time used, agreed well with it. The patient also took cod-liver oil for some time, which appeared to be of great service.] *Lancet, June* 27, 1846, *p.* 695.

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### 152.—LOTION FOR DISEASES OF THE SKIN.

In cases of pityriasis, herpes, and eczema, M. Cazenave has recommended the use of a lotion composed of one part of alum and sixty-two parts of water. In chronic eczema he recommends as a useful local application nitric acid and muriatic acid, of each twenty-five drops, to ten ounces of water.

[In the next article, however, these applications are given more in detail.] *Med. Gaz., Aug.* 7, 1846, *p.* 246.

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### 153.—LOCAL TREATMENT OF SOME DISEASES OF THE SKIN.

M. Cazenave frequently prescribes with success the employment of simple acidulated lotions in certain of the slighter forms of acne, lichen, pity-

riasis, herpes, and even eczema; or still more, especially in impetigo after the crusts have fallen off, he has recourse with advantage to the following application of alumina:—Take of alum, eight grammes; infusion of Provence roses, 500 grammes. The dose of the aluminous salt is sometimes increased according to the case, as far as twelve grains, but the lotion which succeeds best with these several affections is unquestionably a mercurial lotion, to the secret preparation known by the name of similar Gowland's solution, and still more to the mercurial emulsion of Bateman. After many trials, M. Cazenave finally adopted the subjoined formula:—Take of bichloride of mercury, ten centigrammes; hydrochlorate of ammonia, ten centigrammes; almond emulsion, 250 grammes: to make a solution. When the eruption in eczema is entirely chronic, M. Cazenave then directs frequent lotions with the following mixture:—Take of nitric acid, 25 drops; hydrochloric acid, 25 drops; distilled water, 300 grammes: mix by shaking.—*Gazette des Hopitaux.*

*Prov. Med. and Surg. Journal, Sept.* 22, 1846, *p.* 341.

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154.—NITRATE OF SILVER IN ERYSIPELAS.

M. Jobert recommends the application of nitrate of silver in erysipelas, in the form of ointment rather than the caustic itself, and gives the quantities as follows:

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|---|---|---|---|---|---|
| 1. Lard, 32 parts or ʒiv. | Nitrate of Silver, | ʒiss. or 12 parts. |
| 2. | " | " | ʒi. | " | 8 " |
| 3. | " | " | ℥ss. | " | 4 " |

*Gaz. des Hopitaux, Aug.* 18, 1846. *Med. Gaz., Sept.* 25, 1846, *p.* 544.

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155.—EFFECT OF HYDRIODATE OF POTASH IN REMOVING THE STAINS OF NITRATE OF SILVER FROM THE SKIN.

A solution of Hydriodate of potassa is found to remove the stains made by nitrate of silver on the skin, almost immediately. It is sufficient to moisten the spots several times with a solution of hydriodate, and then expose the part to the diffused light of the sun, when the salt of silver is decomposed, being converted into a white ioduret of silver, and thus the black color disappears. The instance last given of this effect is the removal of the dark stains produced on the eyelids and cheeks of a young woman, in one of the Parisian Hospitals, by the use of a strong collyrium of nitrate of silver. The same effect has been noticed in this country; for example, the removal by the same agent, of the olive color produced on the cornea by the prolonged use of nitrate of silver. We have not yet observed any report of the trial of the internal use of the hydriodate of potassa for the purpose of removing the dark metallic hue given to the exposed parts of the surface by the internal use of nitrate of silver. If it be found to have this effect also, the fact will be of the utmost value in practice, as giving to the profession a more extended freedom in the employment of a most valuable remedy in many diseases. It is hardly to be expected that the external application of the solution of the hydriodate will produce much benefit in the latter case; but, even in this form it deserves a trial.—See Journal de Medicine et de Chirurgie Pratiques, Septembre, 1846.

*Monthly Jour. of Med. Science, Nov.*, 1846, *p.* 371.

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156.—CASE OF ICHTHYOSIS FORTUITA TREATED WITH THE DECOCTION OF THE ROOT OF THE RUMEX OBTUSIFOLIUS.—By Dr. A. T. Thomson.

[This patient, fifteen years of age, was admitted under the care of Dr. Thomson, in University College Hospital, on the 2d of June, 1846. About

six years before he was run over, which confined him to bed for some time, soon after which the inguinal glands swelled and suppurated. About two years ago, he observed the skin about the ankles become rough and of a dull color, but without pain or redness; it gradually extended up the legs to the body, and finally attacked the arms, where it was of a darker color.]

At present there appear elevations of a warty character, extending from the fore arm to the scapula: the elevations are darker and more prominent over the elbows and the scapulæ. There is a thickly covered warty appearance also over the ankles and the knees; the legs and the thighs appear as if covered with mud. On the sides of the trunk, the back, and the breast, the cuticle has a cross furrowed appearance, and a rough feel, but is scarcely discolored. The scalp is also, for the most part, covered with the same dark, warty-looking elevations as the rest of the body. The face, hands, groins, axillæ, flexures of the elbows, wrists, knees, and the soles of the feet, are free from the diseased appearance. On no part is there any redness of the skin, or pain, or heat, or itching. There are cicatrices from small abscesses on various parts of the body: the lips are red and cracked; the tongue is furred and red at the apex, but it is moist and the papillæ are prominent. The breath is offensive. He has no appetite. The abdomen is free from pain even on pressure, and it is not tumid. The bowels are regular. He has no symptoms of hepatic derangement. The respiratory organs, and also those of circulation, are quite natural. The pulse is 80, soft and compressible. He has passed only three ounces of urine in twelve hours; it is high colored, neutral, of a sp. gr. 1,030, and rather turbid, but it is cleared by heat: it contains globules, apparently fat globules and epithelium scales, when it is examined under the microscope. He has not been under any medical treatment previous to his admission into the hospital.

He was ordered to have the scalp shaved, to have a warm bath, and to take a four grain calomel pill immediately, and an opening draught two hours afterwards, and after the operation of this the following medicine:—

℞. Pil. Hydrargyri, gr. j.; Antimonii Potassio Tartratis gr. j.; Extracti Conii, gr. ij. ft. Pilula 8va quaque hora sumenda.

℞. Liquoris potassæ, ℥xx.; Solutionis Arsenicalis, ℥v.; Tincturæ Cantharidis, ℥x. Decocti Rumicis Obtusifolii, ℥ij. ft. Haust. ter quotidie sumendus.

June 4th. The urine still the same; the bowels are open; the general appearance is already somewhat improved. The medicine to be continued.

6. The legs and arms are much cleaner looking, and where the scales are removed the cuticle is hard, dry, and white. The bowels are regular; the urine measures 12 oz. in the twenty-four hours; its sp. gr. is 1.016. A slightly flocculent cloud floats in it, but it is free from fat globules. The tongue is slightly furred, the scalp not at all improved. The medicine to be continued.

8th. The general health improved. The legs and arms are much better. the elevations on the scapulæ are rather darker. The bowels are regular; the urine still the same in quantity, but it is pale and cloudy. The medicine to be continued.

[Dr. Thomson named this affection ichthyosis fortuita, as it was not hereditary. Bateman and Willan have described another form of ichthyosis, appearing only in infancy—Ichthyosis innata; it is always hereditary.]

Those parts of the body unaffected in this case, were most perspirable, so that a great deal may be attributed in its production to defective action in the capillaries of the skin. It is difficult to say whether this action is increased or diminished. Dr. Thomson considered that in the treatment of this case there were three indications to be fulfilled. First, to augment the action of the capillary vessels of the skin. Secondly, to improve the secretions generally; and thirdly, to aid the action of the treatment on the skin by topical means, so as to stimulate the skin, and to detach the diseased papillæ from it. In order to fulfil the first indication

small doses of blue pill and tartar emetic were ordered, as the latter aided the former in its influence on the cutaneous capillaries, and increased the perspiratory function, which was evidently defective in this case. The arsenical solution and cantharides also, which were prescribed, aided this in a striking manner; and the decoction of the rumex obtusifolius was well adapted as a vehicle for these alteratives. Dr. Thomson was first led to the employment of this species of rumex in the case of a lady who was under the care of the late Dr. James Gregory, of Edinburgh, and who after taking various alteratives, and even being several times salivated, and also suffering the papillæ to be shaved off, was not benefitted.

After employing the various remedies generally found useful in cutaneous affections, he was at last accidentally led to administer the decoction of the rumex obtusifolius. When this had been taken for a fortnight, the patient was apparently cured; but on omitting the medicine the disease returned three or four successive times, and was again cured by the re-employment of the rumex, with the arsenical solution. The habit of disease, however, appeared to be kept up; small blisters were therefore applied to the affected parts to alter the diseased action, and this, with the use of the remedies, effected a perfect cure. Since this time Dr. Thomson has employed the decoction of the rumex in several cases, and it has never failed to effect a perfect cure. After having made trial of the remedies generally recommended in this disease, and after employing the other rumices, and even tar, which is still much esteemed by many practitioners, he had never seen permanent benefit derived from any other medicine except the rumex obtusifolius, which he thinks might prove beneficial even if administered alone; but its action is so much assisted by the medicines previously mentioned, that it should scarcely be relied upon except in combination with them.

On the continent the rumex obtusifolius is employed by the monks as a purgative, and hence is called Monk's rhubarb: but if it should purge much, it would be found to be of little use in this disease. It is only when its full action upon the kidneys or the skin is obtained that it is to be relied upon. It ought therefore to be administered in the form of a decoction; not in that of powder. The second indication is to be fulfilled by generous diet; and here milk would be found to answer well: vigorous exercise, sufficient to excite perspiration, should be taken in the open air. As this cannot be fully carried out during a residence in the hospital, ichthyosis is not well adapted for an hospital. In fulfilling the third indication, we should employ the warm bath, with friction to the surface: the sulphur bath is found to be not more useful than the warm bath at 90°, the chief object being to soften the skin, to enable it to throw off the elevated papillæ, and to improve the perspiratory system.

The prognosis in such cases must depend, in a great measure, upon the general habit and state of health of the patient. If there is a strongly marked strumous diathesis, as in this case, it must be guarded; but if the general health be little affected, then we may prognosticate a favorable termination. In the present case the improvement had commenced, and Dr. Thomson did not doubt that it would progress to a speedy and complete cure. *Med. Gaz, July* 3, 1846. *p.* 35.

The decoction which Dr. Thomson has found to be so beneficial in the treatment of obstinate cases of ichthyosis, is made by boiling an ounce of the sliced root of the common dock, rumex obtusifolius, in a pint of water. Dose about two ounces. *Med. Gaz., July* 17, 1846, *p.* 128.

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157.—TRICHOPATHY AND THE CHEMICAL PATHOLOGY OF THE HUMAN HAIR.—By Thomas Cattell, Esq., M. D., &c.

[The varieties in the colour of the hair, Dr. Cattell considers, depends on the presence of sulphur, and not on coloured fatty matter. The variety of

colour, however, he says, depends upon the relative quantity actually existing in the hair, in combination with oxide of iron. Dr. Cattell observes:]

Tricho-crosology is a compound Greek term, which I have devised appositely to express the chemical processes employed in reducing some of the unseemly varieties of colour to which the hair is subject, to a supposed standard or standards of natural or ideal beauty. These embrace the formation of paste, pommade and liquid.

I.—Phumaform hair dye. 1. Oxide of lead, three ounces; carbonate of lime, two ounces—mix into a proper consistence with hot water, and apply it to the hair, enveloped in oil-skin. 2. Carbonate of lead in the place of the oxide of lead, and proceed as in the other case. The efficacy of this stain depends on the formation of a plumbite of lime.

II.—Stearifform hair dye.—Nitrate of silver, a drachm; nitric acid, two drachms; iron filings, two drachms—mix. After the lapse of a few hours, pour the supernatant liquor on two drachms of oatmeal. Lastly, well mix with three ounces of lard.

III. Chulosiform hair dyes. 1. Silver, two drachms; iron filings, half an ounce; nitric acid, one ounce; water, eight ounces—mix. When the metallic substances are dissolved, pour off the supernatant liquor, which constitutes the dye. 2. Nitrate of silver, eleven drachms; nitric acid, a drachm; distilled water, twenty ounces; soap (sap. viridis), three drachms; gum arabic, a drachm—well mixed. 3. Nitric acid, a drachm; nitrate of silver, ten drachms; soap (sap. viridis), nine drachms; mucilage, five drachms; water, thirty-seven ounces and a half—mix. This differs from the foregoing only in proportions. 4. Lead filings, two ounces; hartshorn shavings, one ounce; oxide of lead, two drachms; camphor, a drachm; water, a pint. Boil for half an hour, and when fine, pour off the supernatant liquor on diacetate of lead and rosemary leaves, of each one drachm. Again boil, and when sufficiently fine, pour off the supernatant liquor, which constitutes the dye.

Of these preparations, as stains for the hair, none claims so decided a preference as the last. It can produce injury to neither the hair, skin, or brain, and possesses the advantage of communicating a beautiful colour and curling property to the hair. Whatever objection there may be to the use of dyes containing the nitrate of silver, from their liability to darken the skin, still I regard them preferable to the employment of caustic earths, owing to the depilatory action of the latter. Before the application of any liquid stain, it is necessary that the hair be freed from all greasy matter. A close brush and a comb are all the requisites in staining the hair. Connected with the general pathology of the hair, the only two points to which I shall now refer, are allopecia and calvities—baldness and fall of the hair. Allopecia may arise from any cause destroying the vitality of the bulb of the hair—as, various fevers, the wearing silk hats, the existence of what, in common parlance, is called a worm at the root, neglect in cleansing the head, &c.

Calvities follows precisely analogous causes, and merely differs from allopecia in degree. To remedy these affections, it would appear, by our daily advertisements, that every advertiser had discovered some secret process—had, in fact, ransacked the whole arcana of science. But leaving these, and the victims that use them, I will mention a general remedy or two which will be found much more efficacious and infinitely more satisfactory in their results than bears' grease, Macassar oil, or any other advertised preventive or curative:—

1. Rosemary, maiden-hair, southern-wood, myrtle berries, hazel bark—of each two ounces. Incinerate, and with the incinerated substance make a strong ley, with which to wash the hair at the roots every day. Keep the hair cut short. 2. Carbonate of potash (pearlash), two drachms; water, a pint; use as the preceding. The efficacy of both these remedial applications depends upon their alkalescent character.

But where a greasy substance is required for the hair, I would suggest the substitution of the elaine of olive oil; though expensive, it will, in many cases, well repay the use, as it never thickens, engenders scurf, or in any way produces detriment to the hair, like common oil or pommade. The only other greasy matters which I would suggest as substitutes for the elaine, are ox marrow, well agitated in a mortar, and castor oil, freed of its adhesive matter. I trust that, for the future, professional men, and not nostrum-mongers, will take charge of the diseases and affections of the hair.

*Lancet, July* 4, 1846, *p.* 8.

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158.—THE FUNCTIONS OF THE SKIN.—By JOHN COVENTRY, Esq., Essex.

The cuticle is the immediate and actual seat of the skin functions; how many and various conditions, then, has this structure, so elaborate in its simplicity, to realize! How distinct, yet consentaneous are its diverse operations!

1st. The skin is an external lung, an aerating mechanism spread out over the body's entire surface. Both lungs and skin abstract oxygen from the atmosphere, which they replace by carbonic acid and watery vapour. A healthy cuticle, then, must be freely permeable by elastic fluids (gases and vapours). 2nd. The cuticle is very profusely perforated by minute valvular orifices, openings of the sweat-ducts; the skin is the grand drainage pipe of the body; and when, on indubitable authority, we learn that, computing 2500 square inches as the body's superficial contents, its linear amount of drainage pipe is about twenty-eight miles—an hour's railway ride forsooth! (Wilson)—we shall arrive at something like an appreciation of the importance of keeping this pipeage pervious.

Now, from the two just named properties, the skin is manifestly complementary or vicarious in its functions to those two vital organs, the lungs and kidneys; therefore an obstructed skin throws the whole onus of elaboration upon these latter organs, which consequently become overworked and diseased. 3rd. This is not all. The skin is a decarbonizing organ; opening into the cuticle, in common with the hair follicles, are the orifices of the "fat glands," which secern an oily matter (for the skin's lubrication) from the blood; if allowed to collect, this fatty matter checks the "transpirability" of the skin, by glazing it over with a sort of natural varnish, thus throwing the whole work of decarbonization upon the liver; its fat cells become gorged, and thus arises that most grave malady, "fatty liver," good enough in a pasty, if there be, that is, any virtue in paté de fois gras, but no trivial calamity to any unfortunate human possessor. Carbon is retained, moreover, in the blood, depriving the sentient lining of the arteries and left heart of their proper stimulus; and carbon thus, with saline and other impure matters circulating through the brain, deranges that organ of organs. The connexion, then, between a clear head and a clear skin is closer than the unlearned might suppose. 4th. Many years back, Drs. Blackall and Osborne discovered that dirtiness was a great source of dropsy. To understand this, it must be recollected, that in an impure obstructed skin are checked two of the skin's main functions—evaporation and exhalation.

*Lancet, May* 9, 1846, *p.* 524.

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## DISEASES OF THE EYE.

159.—EFFICACY AND MODE OF ADMINISTRATION OF BELLADONNA AND ATROPIA.—By W. R. WILDE, Esq., Surgeon to St. Mark's Ophthalmic Hospital, Dublin.

One of the greatest improvements in the oculists' materia medica of late years, has been the introduction of the alkaloid denominated Atropia, which,

we believe, we were the first to introduce into practice in this city, upwards of two years ago. It was procured for us by Messrs. Bewley and Evans, who have solutions of it according to our formulæ, of the following strengths:—One grain, two grains, and three grains to one drachm of distilled water, and three drops of spirits of wine, and numbered 1, 2, and 3. The salt is rendered soluble by the addition of a drop of dilute nitric acid, and the spirit is added to make the solution keep. A single drop of number 1 placed upon the conjunctiva of the lower lid (where it causes neither pain nor irritation), in a healthy eye, dilates the pupil, in a period of time varying from five to fifteen minutes, to double, or even more than the ordinary medium size, and will retain it so, upon the average, from four to five days; at which period it generally begins to contract, but the pupil does not fully regain its previous size, nor the iris its mobility, till the sixth or seventh day. There will be, no doubt, exceptions to this rule, particularly in cases where there may be such an idiosyncracy present as would render the eye susceptible to the action of the atropia belladonna used in any form, and perhaps keep the pupil permanently dilated for months. To counteract this effect of the solution number 1, we have employed upon the second and third day after its application those remedies which generally excite the pupil to contract, such as sudden exposure to strong light, the application of electro-magnetism, the use of opium, and the application of the vinous tincture of that medicine upon the conjunctiva; but each and all these means have failed to lessen the size of the pupil, in many instances, until the end of the third, or fourth, or fifth days. Solutions numbers 2 and 3 produce a more decided effect upon the iris, and in a shorter space of time, and retain the pupil dilated for a longer period—even to the eighth or tenth day. When the object is to keep the pupil in a state of permanent dilatation, as in cases of iritis and aquo-capsulitis, as well as to try and break up recent adhesions between the iris and lens, or to withdraw the iris from protruding through an aperture caused by a wound or ulcer near the centre of the cornea; in all cases of central cataract, where the cornea is opaque in its central portion, or that a portion of the pupillary margin of the iris is attached to the back of the cornea, after the distission of a cataract; or, in fact, in any case in which we wish to produce permanent or complete dilatation of the iris, the solution of atropia will be found much more efficacious than the usual mode of applying the extract of belladonna externally. It is, moreover, much more cleanly, and is not liable to the objection urged against the latter, of producing an unpleasant eruption around the brow on which it is applied, and it is preferable to the ordinary mode of placing a few drops of the solution of the extract between the palpebræ, inasmuch as it causes no pain nor irritation.

In cases, however, where there is much conjunctivitis, or even deeper-seated inflammation attended with lachrymation, present, it does not possess the immediate and marked power over the iris which it does in the healthy eye, and its effects pass off much sooner; and this remark is applicable even to the three grain solution. It is possible that in such cases, the mucous discharge, and particularly the lachrymation which is present, may dilute it too much, or the morbid irritability and increased vascularity of the organ may render it less susceptible of the local application of this remedy than it would be in an otherwise healthy condition, therefore, in cases of violent iritic inflammation, the syphilitic for instance, where the disease had considerably advanced, and extensive exudations of lymph had taken place, we would not solely depend upon the atropia solution, but likewise apply the extract round the orbit. In cases of recent protrusion of the iris through the central portion of the cornea, the result either of injury, or rupture from ulceration, &c., and when there was no great irritability and blepharospasmus present, we have applied the strong atropia solution externally, by means of a small portion of linen rag wet with it, and retained for a short time upon the closed eyelids, with the most happy results.

We may here remark, that the benefits arising from dilatation of the pupil have not been sufficiently attended to in the general treatment of ulcers of the cornea. We have, on several occasions lately, been able not only to save the eye, but even to prevent adhesion between the cornea and iris (synechia anterior), and consequent blemish, by means of the judicious application of the preparations of belladonna. In cases of rupture from ulceration, when we have seen the patient shortly after the rupture occurred —and in many of those instances hernia of the iris had absolutely taken place—we at once applied the atropia solution, closed the lids, kept them in that condition with isinglass plaster, and then applied a large pledget of lint smeared with the extract of belladonna over the eye and brow, and retained it in position by a light bandage, at the same time that we employed, when necessary, local depletion by means of leeches on the temples and over the malar bone, together with blistering, and constitutional treatment calculated to lower the inflammation and prevent the further spreading of the sloughy or ulcerated process in the cornea. We keep the eye covered up in this state for thirty-six or forty-eight hours, and have had, in most instances, the satisfaction of finding, when we came to examine the eye, that the iris had been withdrawn from the wound, the pupil had dilated, and the cornea had united.

There are, however, certain cases in which the use of atropia is inadmissible, namely, in examining the eye for cataract, where we do not wish the dilatation of the pupil to continue longer than a few hours, if possible. In cases where we wish to dilate the pupil before we perform the operation for absorption of the lens, we have more than once seen unpleasant consequences result after this manner. It is well known to operative ophthalmic surgeons, that after the dilatation with the ordinary belladonna extract or infusion, the iris will, during the operation of keratonyxis, partially contract, either from the loss of a few drops of aqueous humour, or from its irritability being excited by the side or flat of the needle touching the margin of the pupil, or from the cataractous lens, whole or in a broken condition, pressing against it; and this condition is rather serviceable than otherwise, for should the lens be inclined to start from its bed, and press forward through the pupil into the anterior chambers, the iris acts as a partition to keep it in its place; while in a few hours the aqueous fluid is regenerated, the iris falls back into its natural position, and can afterwards be kept dilated by the continued external application of the belladonna.

If, however, the pupil has been previously dilated by the atropia, it is thoroughly immovable, and the lens is liable either to press into it or become dislocated, and get into the anterior chamber. This latter accident occurred to us some time since, in breaking up the lens for congenital cataract. We had ordered a solution (No. 2), of atropia, to be dropped into the eye the night previously, and on arriving in the morning we found the iris reduced to a mere ring. The child struggled a good deal, and a few drops of the aqueous liquid were lost during the operation, which consisted in a mere crucial incision into the capsule. On withdrawing the needle we remarked that there was no contraction of the pupil, into which the lens pressed. On visiting the child in the evening it had been so uneasy and complained so much of pain, and there was so much lachrymation present, that we were induced to remove the bandage and examine the eye. The cornea was found to have become plump, from the regeneration of the aqueous fluid, but the iris had remained immoveable, and the lens had started into the anterior chamber, where it caused considerable irritation and subsequent inflammation. It absorbed completely, however, without a second operation, and in a much shorter time than usual.

In cases of photophobia following cataract and other operations on the eye, and attended with myosis, which had resisted the continued external application of belladonna, as well as the strong atropia solution dropped into the eye, we have found the most marked beneficial effects result from

the internal administration of the extract of belladonna, given in the form of solution, to the amount of the sixteenth of a grain, from three to five times a day. This, in the course of thirty-six or forty-eight hours, has seldom failed to relieve the pain and intolerance of light, and also to dilate the pupil as far as possible.

In neuralgic affections of the eye, characterized by pain of a burning description coming on at particular, and often regular intervals, sometimes at particular hours of the day, yet induced by reading or using the eye in any fine work, and unattended with inflammation or any apparent alteration in the texture or motion of the organ, &c,. &c., in which rest, change of air, tonics of various descriptions, particularly iron, and other means, had failed, we have latterly administered belladonna internally, with the very best effect, in doses varying from the sixteenth to the sixth of a grain three times a-day, given in the form of a solution. It may appear strange, but it is nevertheless true, that in some cases of old and inveterate photophobia, as in that form accompanying pannus, or the ophthalmia attended by vascular cornea in discharged soldiers, the internal use of belladonna will be found most efficacious.

We quote the following from a recent number of the Gazette des Hopitaux :—"For a long time M. Berard has employed in his practice at La Pitie, in place of the extract of belladonna, collyria containing the active principle of belladonna, atropia. This substance, signalized for the first time by M. Brandes, who had not, however, obtained it in its pure state, but since isolated by MM. Meire and Seines, presents many advantages over the extract of belladonna; first, by acting with extreme rapidity in dilating the pupil, and by being endowed with great energy, sufficient to produce its effect in a solution of 0·05 or 0·10, in twenty grammes of distilled water, possibly a consideration of little importance in an hospital, but of great value in private practice in enabling one to avoid the employment of black unctions, which disfigure so much, and for which some patients, particularly females, have a great repugnance."

*Dublin Quarterly Jour. of Med. Science, Nov.* 1846, *p.* 553.

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160.—TREATMENT OF SYPHILITIC INFLAMMATION OF THE EYE.—By Dr. Jacob, Dublin.

[In the treatment of syphilitic inflammation of the eye, mercury is the grand remedy; it not only acts as a specific in eradicating the disease of which the iritis, &c., is only a symptom, but as in ordinary ophthalmia it prevents those morbid changes of structure which would injure or destroy the function of the organ. Fifteen years ago, Mr. Carmichael, of Dublin, called the attention of the profession to the use of turpentine in these cases, but, from the well-known effects of mercury in syphilitic diseases, and its consequent peculiar adaptation to cases of this kind, turpentine has scarcely had the trial it ought. Dr. Jacob observes he has not fairly tested its use, having only given it as an auxiliary, or where mercury had failed, or could not, from idiosyncracy or other cause, be introduced into the system. Dr. Jacob quotes from Mr. Carmichael's Essay, published in 1829, as follows :]

The attention of the profession has been in so many instances directed to the administration of turpentine in peritoneal inflammation, that the claims of that medicine to our notice, as a valuable remedy in this complaint, may at present be considered fully established. The number of cases recorded in the different periodical journals which have yielded to its exhibition, render it unnecessary here to make any further remark on the subject.

If we observe the nature of the parts which are the seat of peritonitis, the description of inflammation that engages them, and the subsequent mor-

bid appearances, and compare all those circumstances with those to be met with in iritis, strong grounds will, I think, appear for presuming that in many points a striking similarity may be traced between them; in both a serous membrane is engaged, and in both the adhesive inflammation is to be seen producing adhesions between surfaces intended by nature to be free. It is true that the two diseases occur in parts of the body very different from each other in many respects; and it is likewise true that this material difference is supposed to exist between them—namely, that while peritonitis is a simple idiopathic disease, iritis, on the contrary, in its different varieties, but particularly in that which follows syphilis, is thought to proceed from a peculiar constitutional taint, and consequently to participate in its peculiar nature; but even admitting this difference, their characters nevertheless unquestionably coincide in these essential points, that in each the adhesive inflammation, and its consequences, are the morbid appearances to be observed.

Under this impression I was induced to make trial of turpentine in iritis, conceiving that where such similarity of appearances were met with, as those just mentioned, a medicine possessing any control over them in the one situation, might probably be productive of some benefit in the other; a few cases were, therefore, submitted to its influence, and the results were such as to confirm the idea I had formed: the first trial was in 1824. I use the turpentine in this complaint in drachm doses, given three times a day. Its disagreeable flavour and nauseating effects I have found best obviated by almond emulsion. This circumstance it is very necessary to attend to, the medicine being so unpleasant, that, if its taste be not in some way disguised, it is difficult to depend on patients taking it with the necessary regularity. In the formation of the emulsion if double the quantity of confecton directed in the London pharmacopœia be employed—that is, two ounces to the half-pint of water, it answers the above objects much better: the residuum may be removed by straining. With an emulsion so made, the following is the formula I now generally adopt:

℞. Olei terebinth. rectificat. ʒi. Vitelli unius ovi tere simul et adde gradatim. Emulsionis amygdalarum, ℥iiij. Syrupi corticis aurantii, ʒij. Spiritus lavandulæ compositæ, ʒiiij. Olei cinnamomi guttas tres vel quatuor. Misce, sumat cochlearia larga duo ter de die.

In a few cases it has been necessary to increase the quantity of turpentine to an ounce and a half, or two ounces, in the above mixture, the other ingredients being proportionally diminished, so that a drachm and a half, or two drachms of it may be taken each time; but in general, when administered to the extent directed in this formula, it has very seldom indeed failed, though extensively tried, and in very urgent cases: the instances of its failure shall presently be noticed. The strangury, so frequently induced by the internal use of turpentine, is obviated by the usual means—flax-seed tea and camphor julep; when very urgent, the medicine may be suspended for a time. The tendency to acidity in the stomach, which it sometimes causes, is relieved by the addition of carbonate of soda to the mixture; ten or fifteen grains to the eight ounces will be sufficient; some patients have said, the taste was further disguised by this addition.

When the local inflammation is high, and acute pain is present in the eye and side of the head, the abstraction of blood from the temple by cupping, or the more immediate seat of the disease, by leeching, may be resorted to: the same practice is adopted where mercury is used. Nevertheless, I have frequently, when these symptoms were very urgent, relied solely on the turpentine mixture, and with the most decided and expeditious relief; indeed, in some instances, where the pain and hemicranium existed as acutely as they are perhaps at any time to be met with, patients have declared they were considerably relieved after they had taken it once or twice, and that its subsequent exacerbations were lessened in a very remarkable degree. It is in the former cases I have generally found it neces-

sary to follow up the bleeding by increasing the quantity of the turpentine. It is highly necessary to observe, that the condition of the bowels will require attention; the beneficial effects of the medicine appear to be in certain cases suspended when constipation is present, and are called forth, as it were, when this is removed.

Perfect rest, if not absolutely material, will at least be found most conducive to the complete production of its salutary effects. In a few cases where patients, from their particular situations in life, were obliged to continue in active employment, the same satisfactory results did not follow its exhibition, nor was its influence fully established until this was attended to. When all the other symptoms of the disease have subsided, except a slight remaining indistinctness of vision, I do not consider it necessary to continue the medicine farther; some time is generally necessary for the complete removal of this; but the powers of the system may be relied on for its accomplishment. Wherever I had an opportunity of examining patients who had been dismissed with this indistinctness of vision, I have always found them to have been quite relieved from it a short time after they were so discharged.

In some of the following cases, particularly the first of them, it will be seen that sedatives were employed along with turpentine, such as opium, henbane, and cicuta; but it is almost needless to add, that they could not have any share in the cures which took place in these cases. The same description of medicine—namely, opium is also used, and pretty extensively, when mercury (calomel) is the treatment adopted; but the removal of the disease under it is entirely attributed to the latter, the former being conjoined with it for the purpose of detaining it in the alimentary canal, and thereby promoting its absorption into the system; or it may also have the effect of allaying severe pain, and with which view they were exhibited in the cases they were here employed in; in this way they may sometimes be serviceable.

By these means the administration of turpentine has very seldom indeed failed in effecting a perfect cure, the amendment being generally quite perceptible the day after it had been commenced with, as may be readily conceived, from the well-known quickness with which it pervades the system; I must, however, observe that, in a very few instances it was not attended with such marked success; and, although in my own opinion, its failure in them may be attributed to other causes than its inefficacy, I consider it right, however, to notice them here. In the syphilitic, as already remarked, its effects appear to be most decided; I mean when accompanied by those symptoms already mentioned, and which are considered as characterizing that species of iritis, relying very much on it in those attended with low and partial inflammation of the sclerotic coat.

On the other hand, in a few cases where this inflammation was very acute, of a florid red colour, deeply and extensively engaging that membrane, the conjunctiva also inflamed, so as to form a net-work of vessels, obscuring more or less the former tunic from view, and instead of forming the zone, already mentioned, at a short distance from the cornea, encroaching thereon. I did not succeed in completely removing the complaint by its administration, though it certainly arrested its progress. Again, in that description which occurs after fever, it sometimes was not satisfactory in its results. However, in making this statement, I must remark, that in many cases attended by the above appearances, it has effected a perfect and decided cure, and in several of those following fever, when mercury and all other means were unsuccessful, its removal was ultimately accomplished by the use of turpentine alone.

But in speaking of those few unsuccessful cases, I have to observe on the difficulty so frequently experienced in dispensary practice, where I principally made my observations on this subject, in having our directions attended to with that strictness which may enable us to form correct opin-

ions on the effect of any medicine. I have witnessed this negligence even in hospital practice, and had some doubts of the result for a time, till close attention discovered the medicine was not regularly taken by the patient, and on enforcing its administration in the mode I directed, the usual beneficial consequences followed; I am therefore led to imagine in those cases where turpentine did not succeed, that its failure is to be attributed to neglect on the part of the patient, rather than want of efficacy in the medicine; for without this explanation how can we account for the very same description of cases being attended in others with decided and complete success. If, however, the fact be, that some cases are not quite amenable to its influence, I am at present unable to make a distinction further than I have stated: perhaps future trials may enable me to be more explicit. Can idiosyncrasy be the cause, rendering the turpentine in these particular cases less efficacious than what it generally is?

However this may be, in introducing to the profession a description of treatment which is novel in the disease, I think it necessary not only to give a full account of the manner I have conducted it, but likewise the true results derived from it, according to my experience; and I have therefore stated, that in some few cases (and these very few), the administration of turpentine was not attended with the decided success I generally found it to obtain in others, and have also described the appearances which presented themselves in the unsuccessful cases.

The great error generally committed by persons bringing forward any new mode of treatment, or medicine, is a too sanguine description of its supposed powers, the representation of which is sometimes found not to be supported by experience. The consequence of this is, that, if upon trial it does not uphold the exact character for which it has been attempted to be established, it not only falls into disrepute, but may not even be allowed the credit it fairly possesses, whereas, had correct statements been made of its defects as well as of its merits, future investigation would ascertain how far it could be trusted, and thus remedies, though not general in their application, might with much advantage and benefit, be retained as adjuvants in the cure of certain diseases. Although, therefore, I have found the administration of turpentine in cases of iritis generally, to have been attended with very extensive success, and far beyond what would entitle it to rank as an assistant in its cure, still, as in some cases which were submitted to it, the same satisfactory results did not follow, I think it but right to mention it here in the manner I have done.

*Dublin Med. Press, July* 1, 1846, *p.* 2.

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161.—TREATMENT OF GONORRHŒAL OPHTHALMIA.—By JOHN WALKER, Esq., Surgeon to the Manchester Eye Hospital.

It is my opinion, says Mr. Walker, that the antiphlogistic treatment of purulent ophthalmia is both useless and improper. I have never myself employed bleeding, either generally or locally, in any of the cases of this affection which have come under my own care within the last thirteen years. Having for some time previously been in the habit of witnessing the admirable effects of stimulants in the treatment of some other varieties of conjunctivitis, it seemed to me that they might be equally serviceable in the disease in question; and I believe I was the first to employ the nitrate of silver, in substance, in this variety of ophthalmia; at least no published statement of it had appeared at the time when my paper, detailing some cases in which it had been successfully used, was published (in 1830). The result, as regards my own mind, from my practice with this article, in substance is, that I have great confidence in my ability to check by it the progress of the affection; and, at the same time, a conviction that very few, f any cases of it will terminate unfavourably if this treatment be resorted

to before any deep-seated ulceration or sloughing has commenced. The application of the nitrate in substance is easily made. Expose the conjunctival surface of the inferior eyelid, and then draw the stick, pointed like a pencil, lightly across it. The application is always productive of increase in the lachrymal discharge, and a severe smarting sensation, which usually continues from half an hour to three or four hours. At the expiration of that period the uneasiness subsides, and a decided improvement is soon perceptible in the condition of the eye.

*Med. Times, May* 16, 1846, *p*, 129.

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162.—PTOSIS.—By J. F. France, Esq., Guy's Hospital.

It is interesting to inquire the reason of the peculiar liability of the motor oculi to paralysis, apart from other nerves of the orbit; for such cases as the nine first detailed, wherein this nerve was singly paralytic, are very frequent. This is evidenced by the number falling, within a comparatively brief period, under my individual observation; but my own experience upon this point is only corroborative of that of others, and it simply needs attention to be directed to the subject, to derive ample confirmation of the fact—that the third nerve is remarkably prone to paralytic affection—from a casual stroll through any crowded district; indeed, the diplopia of supervening inebriety is an exemplification of it. The third nerve here exhibits its aptitude for paralysis, by being the first to discover impairment of function; whence, early in his intemperance, the individual, qui studet calicibus epotandis, perceives this apparent duplication of objects, the mere result of his inability to converge the optic axes properly upon them.

Ptosis is described to be often produced by a rheumatic affection (as paralysis of the facial nerve has followed long-continued exposure to currents of cold air); and there can be no doubt of the competency of such a cause to produce it; yet the uniformity with which, as just noticed, the complaint was traceable, in the above cases, to intra-cranial disturbance, would seem to invalidate the probability of a rheumatic origin being common. Even to suppose, however, that paralytic ptosis is in general rheumatic in its nature, would not at all tend to the solution of the question—why the motor oculi should be so often selected to suffer, and to suffer alone.

This circumstance must, I apprehend, of necessity be ascribed to some constant predisposing condition of the nerve (one existing, therefore, in the state of health), brought into action as an element of disturbance when a morbid tendency has arisen. If the fact be so; and if, in the majority of instances the disease arise, not from a rheumatic or other locally acting impression from without, nor from derangement of any kind within the orbit—for when the entire nerve is paralysed, we naturally look for a cause situate posterior to its distributive expansion, upon entering that cavity; nor from disturbance in the passage of the nerve through the lacerated foramen—where, from its close apposition with the sixth and nasal branch of the fifth, we can hardly conceive a paralysing influence from which the latter nerves should be exempt;—if such be the case, we are constrained to seek such predisposing condition, in other words, such anatomical arrangement, within the cavity of the cranium, where we have already seen reason to fix the efficient or immediately exciting cause of the malady.

Now, directed as we are, in this way, to the intra-cranial course, of the motor oculi, for the probable source of its pre-eminent tendency to paralytic affection, it seems to me not difficult to assign, in this situation, a satisfactory explanation of the fact. We find the nerve, almost throughout this track, in the immediate vicinity of those which must be regarded as very dangerous allies: first, hooking round the posterior cerebral artery, to traverse the narrow interval between that vessel and the superior cerebellar; then running forward nearly parallel to the posterior communicating artery,

in a degree of proximity, the occasional mischief of which is demonstrated by the necroscopic examination, and then crossing the termination of the internal carotid, immediately on its outer side, and closer to it than any other of the nerves contained within the cavernous sinus.

The sixth nerve, it is true, is previously in actual contact with the coats of this vessel; but running along the floor of the sinus, must, in a great degree, be secured from pressure; as, from the upward direction of the current of blood, the horizontal portion of the carotid must be rather raised from, than pressed against, the inferior wall of the sinus upon each contraction of the left ventricle; and, from the same cause, the inferior wall of the artery itself must be, mechanically, the least liable to morbid distension or rupture. That nerve, however, sometimes suffers like the third, as in the subjoined case; in which it may, with considerable probability, be surmised, that the point of nearest approach to the carotid, was the point where its integrity was destroyed. The partial character of the defect in vision would seem rather to indicate disorder of the retina than of the optic nerve.

James D———, aged 24, an excavator and habitual drunkard, was admitted April 11, 1845. About a month previous to his application, after a fit of intoxication, the left eye first became affected with squint; and the double vision, which this produced, incapacitating him from continuing his labor. He was, at the same time, attacked with headache of considerable severity, vertigo, and tinnitus; all which symptoms occasionally recurred, up to the time of his admission. At this period, the motions of the right eye and lids were perfect, and the pupil was active; but vision misty, especially in respect to objects below the level of the eye. The left eye and lids likewise enjoyed their normal motions, with the exception of that of abduction; the globe constantly maintaining the position of adduction, from which it could not advance to the central position, whether the opposite organ were opened or closed: the pupil was active, and corresponding in size with the right pupil, and the vision perfect. Diplopia had ceased after a week's persistence; and the patient was free from any other paralytic affection than that of the rectus oculi externus. He was ordered,

Coloc. c. cal. gr. x. statim; pil. hydrarg. gr. v.; pil. opii. gr. ¼ nocte maneq.; emol. lyttæ nuchæ appl.

The remaining pain in the head was soon removed; but after continuing in the hospital about a month he was discharged, without having regained in any degree the power of abducting the left eye. The circumstances, above adverted to, respecting the relative anatomy of the nerves of the third pair will go far towards elucidating the cause of their remarkable proneness to paralysis; for it is evident how direct must be the deleterious influence upon their function of any temporary or permanent enlargement of, or effusion from, any portion of the arterial tubes, with which they are in so close proximity.

It may be objected to this view, that it is rather a general rule throughout the body, than a particular arrangement in the instance under examination, for nerves to accompany blood-vessels: but a thought upon the peculiar condition of the parts contained within the unyielding bony parietes of the skull will suffice at once to deprive the objection of force. No one of these can, by morbid growth, or extravasation from its walls, assume the occupation of a space, in the most trifling degree, larger than is healthily its due, but by more or less detrimental encroachment upon some neighbor; which, owing to the unaccommodating nature of the cranial parietes, cannot, as in other situations, slip aside, and thus elude the injury. Of course, when such an enlargement or extravasation occurs, the part nearest at hand will cæteris paribus, suffer the earliest and the most severely; and hence, I believe, it is, that we so often find the power of the motor oculi impaired or entirely destroyed, without any other nerve apparently partaking in the derangement, or, at least, partaking in equal degree.

The course of treatment pursued demands but little observation, as the

general principles upon which it was conducted are commonly recognised. One only remark I would venture; it is, that considerable reserve in the use of direct depletion is commonly most in accordance with the principles of sound practice. The two patients in whom venesection was adopted before their application at the hospital, experienced very questionable benefit from it; while the milder measure of cupping, followed up by the use of mercury proportioned to the powers of the patient, evacuation of the bowels, restricted diet, blistering, &c., and, subsequeutly, a guarded resort to tonic medicine, were productive of very decided advantage.

A few words may be bestowed upon operative measures. The idea of subjecting an eyelid, abandoned by its proper levator muscle, to the influence of the occipito-frontalis (which is capable of being converted into a substitute of no despicable efficiency), was, I believe, first suggested and put in practice by Mr. Hunt, of Manchester; and the operation has been subsequently advocated and repeated by Mr. Curling. In the present instance (the only case in which I have employed it), it certainly proved serviceable. The improvement in the patient's personal appearance was great, and highly gratifying to herself; for she had regained the power of keeping the eye open, and thereby became relieved of the disagreeable semi-cadaveric aspect previously borne.

Had the division of the external straight muscle rectified the position of the globe, the result would have been still more satisfactory; but that it was not followed by this effect, after five months' maintenance of the state of abduction, and in the absence of any adductive power, was no matter of surprise. The patient, for three months prior to her application at the Eye Infirmary, had laboured under complete paralysis of the muscles supplied by the motor oculi; a seven weeks' trial of medicinal resources was not too long a preliminary to the operations; and it was expedient to insure the success of that intended for the cure of ptosis, before having recourse to the less promising one, the possibility of advantage from which was altogether contingent upon the success of the former. I think the operation for ptosis—which essentially consists in supplying the deficiency of one paralytic muscle, by adapting another, deriving nervous influence through a different and unobstructed channel, to its office—most scientific and ingenious in conception: in execution it is easy; and in cases, where personal appearance is an object—medicinal resources, patiently tried, have failed—and there seems no reason to apprehend any further cerebral disturbance, its careful performance is decidedly indicated. The performance of the operation, trifling as it may appear, must be careful; for if the portion of skin to be removed is not first very accurately calculated, by nipping it up with a pair of entropeon forceps, and then testing the ability of the patient to close the lids completely, as well as open them, the very obvious danger is incurred of cutting away too much integument, and creating, in consequence, a strictness of adhesion between the brow and superior palpebra, which will prevent the apposition of the lids in sleep, and establish a liability to all the deplorable consequences of obstinate chronic conjunctivitis.

*Guy's Hospital Reports, 2nd Series, Vol. IV., p. 53.*

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163.—CASE OF CONGENITAL OPACITY OF THE CORNEA.—By Dr. P. W. MACLAGAN.

[The wife of a private soldier was delivered of a blind child. Fourteen hours after birth, its eyes are reported in the following state:]

On neither was there the slightest trace of vascularity or purulent discharge; the left cornea was completely opaque; the sight was in the same condition on its inferior two-thirds, but the upper third was clear, the opacity terminating by a tolerably fine edge. At first the narrator thought that he could perceive this edge to change its position as the child's head

was inclined to one side or the other, which led him to suppose the opacity resident in the aqueous humour; but this he found to be a mistake. Never having seen such a case, and not being able to hear of one, he was led to form an unfavourable prognosis: but in this he was agreeably disappointed: for in a few weeks the edge of the opacity on the right cornea began to thin off, to become less defined, and at length to recede, so that a part of the pupil could be seen on looking straight at the edge, while at first it could only be observed by looking from above. It was long before any change could be perceived on the left eye; but in January, three months after birth, it soon began to improve—the opacity at the upper part of the cornea becoming more diluted looking, and by degrees disappearing. At this time it was curious to observe the infant instinctively depressing the eye-ball when any bright object was held before it; so as to permit its image to fall through the upper portions of the cornea. When Dr. Maclagan was removed from that part, in March, there was only a small portion of the right cornea opaque, and the upper part of the left was tolerably clear, so that the child directed the eyes forwards, and not, as formerly, downwards. He has great hopes that the opacity may disappear entirely, or at least so far as to leave vision unimpeded. The author refers to some remarks on this subject which he has since read in Braithwaite's Retrospect. One thing he thinks may be drawn from all the cases recorded, viz., that the opacity has a great tendency to cure itself, if left alone.—*London and Edinburgh Monthly Journal of Medical Science.* *Med. Gaz., July* 24, 1846, *p.* 172.

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164.—EMPLOYMENT OF A COLLYRIUM OF TURPENTINE IN THE TREATMENT OF DIFFERENT DISEASES OF THE EYES.—By Dr. S. Laugier, Surgeon to the Hôpital Beaujon.

Dr. Laugier commences by stating, that the employment of turpentine, in inflammations of the iris, is already well known, and that its virtues have been ascribed to the power, which it is said to possess, of causing absorption of false membrane in serous cavities. But it is to its external use that he at present wishes to direct attention. He says that he was led to make experiments upon it, by learning the good effects of the essence of junipers, in cases of chronic corneitis, under the care of M. Serres d'Alais.

He commenced his experiments upon some patients who had been using a collyrium of the nitrate of silver, and in whom a manifest improvement took place in a few days, under the use of the turpentine. He then tried it in some acute diseases of the conjunctiva and of the cornea, in patients who had not had any other treatment, and with the same good results. In support of his views, he relates six cases treated in this way; three of conjunctivitis, accompanied with slight tarsal affections; one of scrofulous corneitis; and two of conjunctivitis with corneitis, in all of which the remedy acted well. His manner of preparing collyrium is, to heat slowly in a marble mortar two parts of Venice turpentine, and when it has become fluid, to add one part of the oil of turpentine in small quantities at a time; of this, he instils three or four drops between the eyelids, night and morning. He says that the oil of turpentine may be rubbed up with any fatty body, and used as an ointment, but he prefers using the mixture by itself.—*Archives de Medicine.* *Monthly Journal of Med. Science, Nov.*, 1846, *p.* 373.

# MIDWIFERY,

AND

# THE DISEASES OF WOMEN.

165.—INFLUENCE OF GALVANISM UPON THE ACTION OF THE UTERUS DURING LABOUR.—By Dr. Simpson, Professor of Midwifery in the University of Edinburgh, &c.

[Some years ago, attempts were first made to stimulate the uterus to contraction by means of galvanism; indeed, this was the object which induced Kilian to have his forceps constructed of different kinds of metal, so as to exert a dynamic influence upon the uterus, by exciting galvanic action whilst in contact with that organ. Mr. Ramsbotham, in 1834, proposed the application of galvanism to excite the flagging powers of the uterus during labour, and Dr. Radford has recently proposed and practised the application of galvanism to induce tonic contraction of the uterus, in extreme cases of exhaustion from hæmorrhage. Professor Simpson observes:]

In some instances, and especially where the process of parturition is lingering, the contractile efforts of the uterus occasionally diminish in power, or even altogether cease, and again more or less suddenly or gradually recommence, without our being able to trace out any appreciable cause—mental, vital, or physical—of a nature sufficient in any way to account for the variations which the labour-pains seem to undergo. Besides, the uterus, particularly during labour, is well known to be very readily, and sometimes very powerfully, influenced in its parturient action, by mere states and emotions of the mind alone; and through the medium of the excitomotory system of nerves, the simple application of cold, and other forms of chemical and physical irritation to the surface of the abdomen, vagina, cervix uteri, &c., is frequently and strongly capable of stimulating and increasing the contractile functions of this organ. In attempting, therefore, to ascertain the exact influence of galvanism itself upon the uterus during parturition, these and other sources of fallacy in such an investigation must be necessarily, as far as possible, guarded against. With this view, I sometime ago planned and instituted a series of experiments, the results of which I now propose to state.

The experiments were begun for the purpose of ascertaining, as far as possible, the exact degree of influence which galvanism possessed over the contractile action of the uterus during labour, and consequently the amount of aid which we might expect to derive from this power, in any case in which we had recourse to its assistance. I did not in the first instance doubt (as I was afterwards led to do by the results of the experiments) the actual oxytoxic influence of galvanism. I believed in its actual existence, and was merely anxious to ascertain and fix its actual amount. A little consideration will readily show, that any agent capable of increasing the parturient action of the uterus, may produce that result in one of three ways. First, it may increase the force or intensity of the pains, without increasing their duration or frequency. Secondly, it may increase the duration of the pains, without increasing their intensity or frequency; and, thirdly, it may increase the number or frequency of the pains that occur within a given period, without increasing either the intensity or the duration of the individual pains themselves.

We have evidently little or no power of measuring the existing amount of uterine action by any observations upon the supposed mere intensity of individual pains. The sufferings of the patient, as marking this intensity,

would, no one can doubt, prove a most inadequate and fallacious guide in such an inquiry as the present. But we have the power of measuring, with the stop-watch, the number of pains that recur within a given time, and the actual duration of each pain as it occurs; and these two criteria certainly afford us ample and sufficient means for ascertaining and determining the actual amount of parturient action that may exist within any prescribed period. In the experiments which I have to detail, we measured the amount of parturient action that was present at different limited periods—first, by the length or duration of the individual uterine contractions or pains; and, secondly, by the number or frequency with which they recurred within these periods.

[In the cases recorded by Professor Simpson, the galvanic current was used as strong as the patient could bear. The apparatus made by Messrs. Abraham and Dancer, of Manchester, and employed by Dr. Radford, was used, consisting of a brass stem, seven inches long, and covered with a non-conducting material to near its uterine extremity. The notes of the cases are drawn up by Dr. Martin Barry, who was at that time house-surgeon to the Royal Maternity Hospital, in which six of the cases occurred. An analysis of the cases shows the following results with respect to the frequency in recurrence of the pains, and length of their duration:]

1. *Frequency of the Pains.*—In two cases (1st and 3d), the interval between the pains was least, and the pains themselves were consequently most frequent during the second period in the observations, namely, when the apparatus was simply applied, and before the galvanism was used. In case 4th, they were most frequent during the period following that in which the galvanic action was put in force; and in case 6th, they were most frequent during the first period, or previously to either the apparatus being arranged, or the galvanism applied.

2. *Duration of the Pains.*—In one case (1st), the pains were longest during the second period, when the apparatus was applied without the galvanism; in another (4th), they were longest in the first period, or before any experimental applications were tried; and in two others (3d and 6th), they were of the greatest length during the period subsequent to the removal of the galvanism.

On the whole, the length of the pains and of the intervals was changed and modified in only a slight degree, in these four cases, by the arrangements and applications adopted during the four periods. But in not one of these four cases were the pains either most frequent in their recurrence, or longest in their duration, during the period of the employment of the galvanism, and whilst the galvanic current was passing through the uterus.

The two remaining cases (the 2d and 5th) were, as I have already stated, somewhat exceptional, and that in two opposite directions. In case 2d, during the period that the galvanism was applied, the pains were less in their duration than at any other of the three periods—but the intervals between them were also less; or, though shorter in length under the galvanic action, they were more frequent in their recurrence. In case 5th, the result was different from what it was in any of the other six instances—for, as I have already stated, subsequently to the completion of the galvanic circle, only one pain occurred, and then uterine action entirely disappeared during the twenty-three minutes that the galvanic current continued to be passed through the body of the patient. The result was rendered only the more remarkable by the fact, that the uterine contractions and pains were regular before the galvanism was applied, and again became regular as soon as the galvanic influence was removed.

In some of the cases detailed, the labor was of a very protracted nature, and, consequently, presented so far exactly one of those conditions in which, as suggested by Herder, and by Drs. Ramsbotham and Radford, the galvanism would probably be useful in strengthening and increasing the pains. We have seen this result unfulfilled. Last year, in two cases of

very lingering and difficult labour occurring, the one in consultation, and the other in my own private practice, I took a further opportunity of attempting to increase the defective action of the uterus by the influence of theelectro-magnetic apparatus, and in both instances have signally failed in producing any beneficial effect.

[Dr. Simpson adds :—]

The general results obtained from the employment of galvanism, in the eight cases which I have detailed, may be summarily stated as follows:—In one instance (Case 2), the pains were more frequent in their recurrence but shorter in their duration during the application of the galvanism. In five other cases (Cases 1, 3, 4, 6, and 7), the employment of the galvanism neither increased the average frequency of the pains, nor their average duration. In one (Case 5), the pains ceased whilst the galvanism was applied, and returned upon its removal. In the instance which I have last detailed (Case 8), the uterine action ceased while the galvanism was applied, and did not return upon the withdrawal of the galvanic action, nor for twenty-four hours subsequently. There was no reason whatever at the time to expect this as a probable occurrence, independently of the galvanism. But even admitting, for the sake of argument, that the cessation of the uterine action was not the result of the galvanic influence used, still the fact is amply sufficient to show that the galvanic current had not, at least, the power either of increasing the pains, or even of continuing and maintaining them when they offered to fail. It may be proper to add, that during the galvanic action, in none of the experiments did Dr. Barry or I find, in the intervals between the clonic uterine contractions or pains, any evidence whatever of unusual tonic contraction of the uterus, as shown either by any degree of hardness in the general uterine tumor, or by any degree of tension in the pressure of the bag of membranes, or the child's head against the cervix uteri.

It would be hasty and logically incorrect to deduce from the preceding observations, that under no modification, and under no manner of application, does galvanism possess the power of directly exciting or increasing the contractile action of the uterus. Forms or methods of employing it may yet possibly be detected or devised, affording a different result. But I believe I am justified in inferring from the preceding inquiry, that as employed at the present time, and in its present mode, it is not a means which can be in any degree relied upon for the purpose in question ; and is so far practically and entirely useless as a stimulant to the parturient action of the uterus.

In stating the above conclusions as the result of my own experience, I, of course, by no means, wish to impugn, in any way, the validity of the observations made in one or two isolated cases by others, and in which an opposite effect was supposed to be obtained under the employment of galvanism during labour. Uterine contraction may certainly have become occasionally increased while the galvanism was being used, but I strongly question if that increase was the result of the galvanic agency. I have already hinted, towards the commencement of this communication, how much and readily the existing degree of uterine action may be occasionally modified by the state of the patient's mind, or by other still more unappreciable conditions, and how greatly it is in some cases influenced and excited by the application of cold to the surface of the abdomen, or of mere mechanical irritants to the mucous surfaces of the vagina and cervix uteri.

The use of so portentous an apparatus as the electro-galvanic machine, may certainly sometimes influence the uterus through the mind of the patient, by raising feelings of hope and confidence in the results; or the application to the skin of the abdomen, of the wet sponge attached to the external conducting wire, may excite uterine contraction by reflex action, upon the same principle as cold thus used very generally leads to this effect, both during labour and after delivery. The mere galvanic irritation of the skin or muscles of the abdominal parietes may possibly produce the

same result, without the uterus being itself directly influenced by this agency. Or, lastly, and principally, the mere introduction and mechanical irritation of the "vaginal conductor" upon the surface of the vagina and cervix uteri will, I doubt not, occasionally excite more strong and powerful uterine pains, in the same way, and upon the same principle, as the mechanical irritation of the fingers, or of the lever or forceps, certainly sometimes produces the same consequence.

*Monthly Jour. of Med. Science, July*, 1846, *p.* 33.

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166.—TWIN CASE OF DIFFICULT LABOUR; FROM IMPACTION OF THE HEADS.—By E. W. Eton, Esq., Resident Surgeon, Windsor Royal Dispensary.

[Mr. Eton was called to a case in which the patient was attended by a midwife. The pains had been very severe for ten hours, but had not forwarded the labour; the os uteri was pretty well dilated, and the hip and elbow presenting, the latter uppermost, and to the sacrum. Mr. Eton waited a little while for the soft parts to become further relaxed, and to allow the uterus the chance of changing the position of the child—this however, did not occur, and as he saw the patient was becoming exhausted, he proceeded at once to bring down the feet. He observes:]

The feet were soon seized, as they lay low and forward; they were turned towards the sacrum. A dose of ergot was then given for the first time. After the thighs had passed, the delivery became slow and increasingly difficult; the abdomen suffered great compression in passing, the thorax still more; the difficulty became greater with the further progress of the body; the arms were extracted with much trouble, and it then being practicable an examination was made. I found the vertex of a full-sized head presenting immediately over the breast, in the position where there should have been a chin: the anterior base of the neck could be traced in close and compressed contact with the presenting head, the latter firmly impacted in the pelvic cavity.

The deficiency of the liquor amnii at once occurred to my mind, and a hand on the abdomen confirmed the impression that the case was one of twins, in which both ova had been ruptured, and the head of the second child had descended into the pelvis, between the head and body of the one so nearly born. The new circumstances which obstructed delivery rendered its necessity only more urgent, and to the physical impediment was added the danger of subsequent collapse, never to be lost sight of, with plural births. Though the pains had some force, they were not to be relied on as any great proof of constitutional resources, resulting as they did immediately from stimulus; but even attributing better powers to the patient than she had exhibited, supposing so large an amount of mechanical obstruction could be overcome by natural or assisted efforts, the resistance of the outer parts in a first case was to be looked for, in this increased by the extended chest and shoulders lying within the orifice, and tending necessarily to throw the presentation the wrong way—viz., against the rectum; whilst the efforts of the uterus would be at the same time forcing the other head against the bladder: if life were preserved, deplorable injury could only be anticipated.

To leave the issue, then, to the possibility of nature effecting the delivery in the state of my patient, was out of the question. Three modes of relief offered:—1. to push the head back; 2. to open it; 3. to truncate the extruded body. The first was impracticable; the second, added to the sacrifice of the only child for which there was a hope of life, the conclusive objection that its purpose would remain unaccomplished, as the head, even diminished, would still be an awkward and dangerous obstacle in the way; the third combined the greatest safety for the mother, and a chance of existence for the preserved surviving child. The separation was made

about the seventh cervical vertebra, the finger guarding the knife; the neck, which was left smooth, was then pushed up; it passed easily, and a perceptible fall of the presenting head resulted. The forceps were then applied laterally, and delivery effected at three o'clock, P.M. A non-contractile state of uterus required the cold dash, and it was some time before the viscus could be safely cleansed of its contents. Brandy and ergot were freely adminstered, and no great amount of hæmorrhage took place. My attention divided between mother and child failed in restoring animation to the latter, though long and anxiously continued. Children were both large for twins, each measuring seventeen inches.

*Med. Gaz., July* 24, 1846, *p.* 152.

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167.—PRESENTATION OF THE RIGHT SHOULDER WITH PROTRUSION OF THE ARM—TURNING—INUTILITY AND DANGER OF MUTILATIONS IN SIMILAR CASES.—By Professor PAUL DUBOIS.

A woman, aged forty-four years, who had given birth to twelve living children, all of them having had head presentations, arrived at the period of her thirteenth labor. A midwife who was called in just as the membranes had burst recognised a wrong position of the infant, and sent for two practitioners, who detected a presentation of the shoulder, made useless efforts at reduction, and at length sent the patient to the Clinical Hospital. On rising up, the woman felt something protruding between the thighs. On admission, M. Dubois found the uterus strongly contracted on the child, and presenting in the region of the umbilicus two unequal prominences, the smallest of which, on the right side, and separated from the other by a depression, corresponded with the child's head. The right arm protruded at the vulva, the palmar surface in front, the thumb directed to the right side of the mother.

What should the practitioners who were first called to this woman have done? and what was to be done at present? were the questions asked by M. Dubois, and answered in the following manner: It is to be regretted that there had been no interference when the position was first recognised; for the practitioners afterwards called in, increased by their efforts the irritability and contractions of the uterus, and thus augmented the difficulty. But the right cephalo-iliac position once recognised, what should be done? The first plan that presented itself, was to remain a spectator of the labour, which might have been accomplished under two circumstances; 1st. If the head were not very large, and strongly bent on the breast of the fœtus, so that both would not present a greater diameter than that of the canal in which it was forcibly engaged. This might happen if the fœtus had been putrid, and thus rendered very flexible. 2nd. A spontaneous delivery might have occurred if the head were above the brim, and the shoulder placed under the symphisis of the pubis. The pelvis might thus have been gradually engaged, the nates freed the vulva, and the evolution be thus accomplished. But here examination showed that all the parts were contained in the false pelvis. The second plan was detruncation. This operation would have become necessary, if the contraction had been carried to such a point that an impossibility of introducing the hand without risking a rupture of the uterus had resulted. In such a case it would be necessary to divide the infant in two, and extract the trunk, and then the head, which would not be difficult if the pelvis were well formed.

M. Dubois did not adopt either of these plans. He preferred turning the fœtus. But he did not attempt to push the head to the brim, as, in order to turn it, a certain space is required for the manœuvre. The turning of the pelvis in this case also presented some difficulty. 1st. From the retraction of the uterus, in consequence of the previous evacuation of the waters, increased by the former attempts at turning; and, secondly, From the in-

sufficient dilatation of the cervix uteri. This resolution being adopted, the patient was placed on a bed sufficiently elevated, in order that the accoucheur, in giving to his arm the curvature necessary to reach the feet of the infant, was not obliged to stoop himself. M. Dubois placed a ribbon on the arm of the fœtus, in order that during the manœuvre it might not become impacted in the brim, and thus embarrass the passage of the head. He then took a precaution which is too often neglected, and without which the connexion between the neck of the uterus and the vagina is very likely to be broken, namely, to support the fundus of the uterus by an assistant. M. Dubois now proceeded to turn, recollecting that the fœtus forms in the womb a kind of irregular ovoid, the feet directed upwards, leaving a space between the chin of the child, and symphisis of the pubis. In following the internal surface of the uterus, he wished to profit by this space, in a primary effort at arriving at the feet of the infant; but he was arrested at first by the constriction of the orifice of the uterus, which he surmounted by introducing one finger only, then two fingers, then three, and at length the entire hand. Even then M. Dubois could not reach the fundus of the organ, as its contractions were so strong, that overcome by the pain, he was obliged to withdraw his hand, and it was only on making a second effort that he succeeded in bringing down one foot. But traction on this foot was of no avail, as the ribbon had been applied a little too high on this part. Whilst an assistant held the foot without, M. Dubois raised and pushed up the shoulder, which, elevating the trunk of the fœtus, and causing it to undergo a rotatory movement, soon disengaged the other extremity, and the labour was rapidly terminated.

The infant, as had been foreseen, was dead, and yet M. Dubois had not thought it proper to extirpate the arm which was expelled. He believes that all mutilation, even in a dead fœtus, ought only to be made if it be rational. Now, under the circumstances, it would be evidently useless, and even injurious, for the surgeon might operate on a living infant, believing it to be dead, as in a case which has been previously detailed.—*Journal de Med. et de Chir. Prat.*, 1846, Janvier.

[Why was not a powerful dose of opium given before the usual manipulation was proceeded with.—Ed. B. R.]

*Month. Jour. of Med. Science, June*, 1846, *p.* 443.

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168.—EXTRA-UTERINE PREGNANCY.—By T. H. Yardley, M. D.—Consulting Physician to the Lying-in-Department of the Northern Dispensary.

The patient æt. 44, of leucophlegmatic temperament, accustomed to much exposure and hard work, applied for advice in the early part of August, 1844. She had considerable fever, accompanied with pain in the lower part of the abdomen, where a large tumor could be distinctly felt. It had been there for many years, and gave her very little inconvenience, except when she lifted heavy burdens, or took cold, and even then a few days rest and a mild aperient would remove the unpleasant symptoms. She refused to submit to the necessary examination to ascertain the extent and locality of the tumor. The usual antiphlogistic treatment was adopted.

Early in January, 1845, a large quantity of purulent matter was passed from the bowels; this discharge continued at intervals until July, when she informed me that small pieces of bone had come away with the pus from the bowels. On examination of these they proved to be bones of a fœtus; and, with considerable difficulty, I learned from her the following history of her case, of which she acknowledged to have intentionally kept me in ignorance for fear of having to submit to some unpleasant operation. In 1830, after her marriage to her present husband, she became pregnant. The catamenia was suspended; her breasts enlarged; and she had nausea and morning sickness as in ordinary pregnancy, but no unusual or anomalous

symptoms. When near the term of usual utero-gestation she had a fall, which was followed by violent crampy pains in the abdomen, but not like the labour-pains which she suffered in her subsequent confinement, and there was no discharge per vaginam. A physician residing in the neighborhood was called in to see her; he, however, made no examination, and after directing an anodyne, left her with the understanding that he was to be sent for if his services were required. He was not sent for; and though she suffered severely for several days, and was unable to leave the house for months, yet she never had any regular medical attendant.

She had no vaginal discharge for at least a year after this attack of pain, and at that time her catamenia returned; her health gradually improved, and early in 1834 she again became pregnant, and passed through the usual period of utero-gestation without the occurrence of anything unusual. My friend Dr. Noble attended her during her accouchment, and has kindly furnished me with the following account. "In looking over my note-book, I find that on the 5th of the 10th month (October) 1834, I attended M. G. in her confinement with a still-born male child, at which time there was (apparently) a full-sized infant of a former pregnancy, in the abdominal cavity, extra-uterine. I well remember that it caused much difficulty by the head of the extra-uterine fœtus slipping into the cavity of the pelvis, thus obstructing the passage of the last-formed child; but by constantly pressing up the head of the extra-uterine fœtus, the other child was delivered, though not living. During the convalescence there was nothing very remarkable."

After she was delivered of this child, she says she became pregnant two or three times, and miscarried in the second or third month, but was not attended by a physician. Her general health, however, was very good, and she worked hard till August 1844, a period of nearly ten years. As the case was one of unusual interest, and the patient appeared in a critical situation, I called on Professor Hodge, of the University of Pennsylvania, who kindly gave his assistance. On making an examination per rectum, the os femoris of a fœtus was found projecting into that cavity from an opening on its anterior surface, about four inches from the anus; and on examining per vaginam, the uterus was found pressed against the pubis by a large mass (evidently a sac containing part of a fœtus), which filled up the posterior part of the pelvis, and pressed the vagina forwards.

Dr. Hodge removed the os femoris and one or two small bones, but it was apparent that the soft parts of the fœtus were still firm, except where it was exposed to the air from the opening into the rectum. It was, therefore deemed most prudent to wait till decomposition had produced such a solution of continuity as would enable us to operate with safety. The difficulty of the undertaking being greatly increased by the fact that the opening into the rectum was on the upper part of the sac, the main body of the fœtus lying below it. Dr. Hodge visited the patient with me at intervals of two or three days, and at each visit removed such portions of the fœtus as could be separated from the main body without using imprudent force. During these operations the patient became much exhausted, and appeared to suffer severely, particularly from the passage of sharp points of bone through the rectum.

After each operation, and on the intermediate days, the sac was washed out by passing a flexible tube through the opening into the rectum, and injecting a large quantity of tepid water. Tonics and a nourishing diet were also given to support her system. About the middle of August, inflammation and suppuration took place in the perineum, and some small pieces of bone passed through the opening, and Dr. Hodge, by enlarging the aperture, extracted an os-ilium. The space between the anterior part of the sac and the vagina had now become very thin, and as the head and a considerable portion of the fœtus still remained in the sac, which continued to recede still further below the opening, thereby rendering it still more difficult to re-

move the contents, it became a question whether it would not be proper to make an opening into the lower part of the sac from the vagina, and through that passage at once remove the remains of the fœtus; particularly as the strength of the patient seemed failing, and it appeared probable that nature would make the opening if we did not. In this state of the case, Professor Horner was called in consultation. It was decided to continue to operate from the rectum as heretofore; the dread of a troublesome recto-vaginal fistula being the principal objection to an incision from the vagina.

Dr. Hodge being called to visit an obstetric patient, Dr. Horner, at his request, proceeded to remove such portions as could be detached. The bones of the head were found separated from each other, and were removed with much less difficulty than had been anticipated, though their sharp edges caused much pain as they passed through the rectum. One of the thighs with the flesh on it was removed: and also the principal part of the spine united by the ligaments and muscles. During the passage of these large masses through the rectum, the abdominal muscles were called into action, and bearing down efforts similar to those of ordinary labor were produced. The process of removing from time to time such remains of the fœtus as could be extracted without injury to the mother, was continued for some weeks. Dr. Hodge punctured, from the rectum, a fluctuating tumor below the main sac, from which a quantity of bloody fluid escaped, but it contained no bones.

The patient began to improve early in October, and the sac, in which no bones could be felt, seemed to contract, although there was a good deal of thickening on the left side of the rectum. Mildly astringent injections were now thrown into the sac, and the patient encouraged to use exercise in the open air. From this time she rapidly regained her health and strength, and by Christmas she was perfectly well. The fistulous opening in the perineum was healed, and she was not conscious of any unnatural sensation in the pelvic region. Many of the small bones were lost, but those which were preserved, are in the possession of Professor Hodge, of the University of Pennsylvania. *American Jour. of Med. Sciences, April*, 1846, *p.* 348.

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169.—INVERSION OF THE UTERUS.—By T. R. Mitchell, M. D., Master of South Eastern Lying-in Hospital, and Lecturer on Midwifery in the Dublin School of Medicine.

In a former communication I stated that inversion of the uterus may proceed from other than mechanical causes, and that a certain condition of the uterus was necessary for its production, one portion being in a state of contraction, and another of relaxation. It has also been stated, that the attachment of the placenta to the centre of the fundus uteri, together with the cord being inserted into the middle of the placenta, renders the female peculiarly liable to the accident on the application of the slightest force. Mr. White, of Manchester, in his treatise, lays a great stress on this point, as well as on the danger to be apprehended of a like occurrence from the too hasty delivery of the child. That this accident may also occur without any assignable reason, or spontaneously, the following case, which occurred in Dr. Ashwell's practice, will sufficiently prove; and as there are some points of practical importance connected with it, I shall not apologise for giving it fully:—

*Spontaneous Inversion of the Uterus without Hæmorrhage.*—The subject of this case was nearly forty years of age, had borne many children, and was compelled to work very hard at glove-washing. She had been seen several times by Dr. Ashwell in her former labours, and on one occasion she was all but dead from hæmorrhage, consequent on the expulsion of an ovum of only eight weeks. He saw her a very few minutes after the inversion had taken

place. It was entirely spontaneous, for a friend who was with her during the labour, assured him that the midwife did not even touch the chord. The child was expelled very quickly, and the patient felt a sudden pain, and said that something else was coming. On examination, Dr. A. found the uterus completely inverted, with the placenta adherent, but no blood had been lost; the pulse was rapid; she was pale, and cold, and exceedingly alarmed. Strong gin-and-water was given, and an immediate attempt at reduction was made without removing the placenta; after considerable effort for more than ten minutes, the smallest part of the tumor could not be reduced. The placenta was then peeled off, and the uterus was returned, very little blood being lost. The syncope and quick breathing continued for more than an hour after the reduction, and it was not until sulphuric ether, ammonia, and brandy had been largely given that she entirely rallied. It was more than three weeks ere she had sufficiently recovered to resume her usual avocations.

There is one symptom in reference to this disease which I think of the utmost importance, and which should never be overlooked—viz., that we may have so great a prostration of strength after delivery, as to lead us to suppose that some serious accident has occurred, and yet not a drop of blood be lost more than ought naturally to occur; in fact, the presence of hæmorrhage is by no means a constant attendant on inversion.

I will suppose a practitioner called to the bedside of a woman in a state of syncope without hæmorrhage; upon what may this depend? 1st. The labour may have been tedious, and the patient faint from mere exhaustion. 2nd. From rupture of the uterus or bladder. 3rd. From internal uterine hæmorrhage; or 4th. From inversion of the uterus. How necessary, therefore, that he should at once be aware of the cause of syncope. In the three first to which I have alluded, the uterus may be felt over the pubes; in the last it cannot. As a general rule, it will be well in every case of doubt, at once to make a vaginal examination, as it has, ere this, occurred that the accident has not been detected until after the woman's death, or where it has not proved fatal until all chance of reduction has passed by. In cases of this description, the accoucheur should be certain that there is no escape of blood externally, to ascertain which, he ought not to be content with merely examining posteriorly, but in every instance he ought to look if any has escaped in front, as I have several times found the bed soaked with blood in consequence of a constant stream running over the woman's thigh, although none appeared to come from between the vulva.

Inversion of the womb may be mistaken for polypus, prolapsus uteri, or vaginæ. It has also been ignorantly removed by the crotchet, supposing it to be the head of a child. It may be distinguished from polypus by being rough externally, and very sensitive to the touch. Polypi are smooth and glistening, and the mouth of the uterus can be felt encircling their necks. From prolapse of the uterus it may be known by the absence of the os uteri, and from that of the vagina (which rarely assumes so large a size), by our being able to discover a second opening above the tumor—the true os. I may mention, however, that many first-rate practitioners have mistaken polypus for inversion—accounts of which will be found in the different periodicals.

The treatment of inversion of the uterus will greatly depend upon the fact, whether the placenta be attached to the inverted organ, or if it has been expelled. In the former case—viz., where the placenta is attached, there is less danger of the patient from flooding, as the uterine sinuses are closed by the adherent placenta. In either case, as soon as the accident is discovered, reduction should be accomplished as soon as possible; but a very important practical question remains to be decided. In the event of the placenta being adherent to the displaced uterus, ought we first to detach it, and then reduce the uterus; or, on the other hand, should we attempt the reduction, the placenta being still adherent? Now, in answering

this question, I should state that there is considerable difference of opinion amongst the highest authorities. Madame Boivin recommends the separation of the placenta prior to our attempting reduction, for the following reasons—1st. If the placenta adhere, its detachment will be more difficult after the replacement of the uterus. 2nd. This replacement is difficult enough in itself, without adding the bulk of the placenta to that of the uterus. 3rd. If we proceed with promptitude, we need not apprehend the consequences of hæmorrhage.

In this opinion, however, Madam Boivin is opposed by Sir Charles Clarke, Denman, Burns, Carus, Blundell, Gooch, and others. Burns says, p. 523—"If the placenta still adheres, we should not remove it till we have reduced the uterus." Carus gives his opinion, "that if the inversion is quite recent, and the placenta still adheres to the uterus, it is best to return the uterus before separating the former; but if it is in a great measure detached, which is by far the most frequent occurrence, it is advisable to separate it completely before returning the uterus."

Denman expresses himself to the same effect as Carus, and Sir Charles Clarke observes—"The uterus is first to be returned to its usual state and natural situation, and the case then becoming simply one of a retained placenta, is to be treated as such; but if neglecting this order of proceeding, the placenta should be first removed, a number of bleeding vessels will be exposed before the uterus can contract, and the chance is that the patient may die from hæmorrhage. Blundell advises the reduction with the placenta attached, provided the placenta be adherent to the uterus at nearly its whole extent; but if the attachment be only partial, as by one lobe or so, then its detachment before reduction; and Gooch says—"First make an attempt to replace the uterus without separating the placenta, but if the difficulty of reduction while the placenta is attached is insurmountable, you must then incur the risk of hæmorrhage by first separating it."

With such authorities before him, I think the practitioner can have no difficulty in making up his mind as to the proper plan of treatment, which appears to be in every case to attempt the reduction of the displaced organ without detaching the placenta, but that if that be impracticable, he should then detach it, and proceed with the greatest promptitude to reduce it. That the reduction cannot be accomplished in all cases, even when the placenta has been detached, and that it was not without cause that Gooch alluded to the risk of separating it, the following case, which I quote from Dr. Ashwell's Treatise on the Diseases of Women, will, I think, sufficiently prove:

*Inversion of Uterus immediately Fatal from Hæmorrhage.* (Communicated by Dr. Lever.)

Mrs. ———, æt. thirty-six, the mother of several children, and delicate, was confined, after a quick labour, of a living child. In a few minutes, without any traction on the cord, the patient complained of sudden pain, and said something more had been expelled. The surgeon immediately passed his hand above the pubes but could not detect the womb. An attempt to make a vaginal examination satisfied him that the uterus was completely inverted. Without the loss of a moment he tried to return it without previous separation of the placenta, but failed. He now peeled off the afterbirth; but as there had been some blood lost already, owing to its partial detachment, the entire separation was attended with such fearful flooding that she sunk almost immediately.

There can be no doubt that in all cases of inversion, whether attended with hæmorrhage or not, that the presence of syncope renders the reduction much easier than it would be without it. Sir C. M. Clark says that he has been called by other practitioners to cases of inverted uterus, where the patient has expired from hæmorrhage before the accident was discovered, and that in every instance the displaced uterus was reduced with very little trouble, all difficulty being removed by the depressed condition of the

woman prior to death. Upon the same principle we find that Dewees recommends bleeding to syncope in cases of inversion unattended with hæmorrhage.

Now as to the termination of this disease, we have seen that it may prove fatal in a few hours from flooding. In some instances the hæmorrhage has been followed by inflammation terminating in gangrene, induced by a kind of strangulation of the uterus in its cervix. There are several cases mentioned by Rousset, in which recovery took place after the spontaneous separation of the mortified organ. It may become chronic, and either prove fatal by exhausting discharges, or, as in some rare instances, be spontaneously cured. As I do not intend to enter into the consideration of the treatment necessary for chronic inversion, I shall merely state that it has been fully proved that the inverted organ may be removed with impunity by ligature or excision; successful cases are given by Granville, Gooch, Newnham, &c. In the museum of the College of Surgeons, there are three specimens of uteri removed by Dr. Johnson, of this city, the particulars of which will be found briefly stated in Houston's catalogue, p. 510, and more fully detailed in the Dublin Hospital Reports, vol. iii.

*Dublin Med. Press, Sept.* 23, 1846, *p.* 196.

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170.—USE OF BLACK OXIDE OF MERCURY IN THE VOMITING OF PREGNANCY.

M. Stackler has announced that he has found the black oxide of mercury a most useful medicine for removing the obstinate vomiting which sometimes occurs in females during pregnancy. The vomiting was checked in two cases of unusual severity, by doses of the oxide, equal to five centigrammes daily (= 0·77 grains). No unpleasant effects were observed to follow the use of the medicine. There was no salivation. Dr. Jouger has found the oxide equally beneficial in hysteric convulsions and in cases of uterine irritation.

*Med. Gaz., Sept.* 4, 1846, *p.* 437.

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171.—ERGOT OF WHEAT.

In a private letter from Dr. Reynolds, of Brockville, the writer observes: I send you a small specimen of ergot of wheat, and regret that I could not procure a quantity of it. One of our farmers, two years ago, imported some Spanish wheat, to try whether it would be sufficiently forward to escape the fly, but found last year that it was attacked with a disease similar to that so common in the rye, producing the ergot, and rendering the flour a dangerous article of food, should the grain before grinding be not carefully freed from this variety of smut. I tried the effect of this ergot in an obstetric case, where the os uteri was well dilated; the woman had been for several hours without pains, notwithstanding a recourse to the usual treatment to induce them, &c. I gave about half a drachm in the form of infusion, and in the course of fifteen minutes strong pains came on, and the patient was delivered of a fine boy, making the usual noisy entrance into life; so that in medicinal properties it would seem to have similar effects with the ergot of rye.—*Br. Amer. Jour.*

*Dublin Med. Press, June* 17, 1846, *p.* 376.

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172.—PARTURIENT PROPERTIES OF THE CORTEX RADIX GASSYPIUM HERBACEUM, OR BARK OF THE ROOT OF THE COMMON COTTON PLANT.

Dr. M'Gown, of Hillsboro', Mississippi, relates a case in the February number of the Medical News, in which this plant exhibited decided partu-

rient properties. It has also, at a former period, been recommended by Dr. Bouchelle, of Mississippi, with a view to its parturient action. It is given in decoction, which is made by boiling ℥iv. of the bark in a quart of water until reduced to a pint; and given in doses of two or three ounces every twenty or thirty minutes. *Western Lancet, May*, 1846, *p.* 59.

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173.—CONCLUSIONS RELATIVE TO THE STRUCTURE AND FUNCTIONS OF THE PLACENTA.—By John Goodsir, Esq.

[In Part XII., Art. 176, we briefly gave the opinions of Mr. Goodsir on this subject. In the following extract, however, they are a little more in detail:]

1. The placenta, as has long been admitted, consists of a fœtal and a maternal portion intermixed. But the maternal portion, instead of consisting of a part of the vascular system of the mother only, includes the whole of the external cells of the villi.

2. The external membrane of the placenta villi is a portion of the wall of the vascular system of the mother, continuous with the rest of that wall, through the medium of the placental threads and lining membrane of the placental cavity.

3. The system of the external cells of the placental villi belongs to the decidua, and is continuous with the parietal division through the medium of the cavities of the placental threads. This portion of the decidua has been named the central division of the placental decidua, and the threads decidual bars.

4. The functions of the external cells of placental villi is to separate from the blood of the mother the matter destined for the blood of the fœtus. They are, therefore, secreting cells, and are the remains of the secreting mucous membrane of the uterus.

5. Immediately within the external cells of the placental villi, there is a membrane which I have named the internal membrane of the villi. The membrane belongs to the system of the fœtus, and is the external or bounding membrane of the villi of the chorion.

6. Inclosed within the internal membrane of the placental villi, is a system of cells which belong to the system of the fœtus, and are the cells of the villi of the chorion. These are the internal cells of the placental villus.

7. The function of the internal cells of the placental villi is to absorb through the internal membrane the matter secreted by the agency of the external cells of the villi.

8. The external cells of the placental villi perform, during intra-uterine existence, a function for which is substituted, in extra-uterine life, the digestive action of the gastro-intestinal mucous membrane.

9. The internal cells of the placental villi perform, during intra-uterine existence, a function for which is substituted, in extra-uterine life, the digestive action of the gastro-intestinal mucous membrane.

10. The placenta, therefore, not only performs, as has been always admitted, the functions of a lung, but also the function of an intestinal tube. —*Anatomical and Pathological Observations.*

*Med. Gaz., June* 5, 1846, *p.* 1013.

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174.—UTERINE HÆMORRHAGE.

[Dr. T. R. Mitchell, of the Dublin School of Medicine, says, most justly, that there are no cases which demand more knowledge and self-possession than these, as the patient's life depends mostly upon the promptitude and decision of the accoucheur.]

To the late Dr. Rigby of Norwich, the profession is indebted for the pub-

lication of correct views and method of treatment for different kinds of hæmorrhage during labour. Every one is, or ought to be, aware that he divided hæmorrhage into accidental and unavoidable; the former, where the bleeding proceeded from a separation of the placenta or part thereof from any part of the uterus except the cervix or os; the latter, where the placenta or a part of it is placed over the mouth of the uterus, and necessarily producing flooding at every pain, or as dilatation goes on. Now of those two kinds of hæmorrhage it is not my intention to treat at present, merely stating, en passant, that for the first or accidental variety the best plan of treatment, provided the os uteri be dilated, and the presentation natural, is to rupture the membranes, and leave the case to nature. If the evacuation of the liquor amnii do not bring on the pains, we may then have recourse to the ergot of rye. Should the os uteri be not dilated, and there be flooding, we should plug and wait. In the second or unavoidable variety, if the os be dilated or dilatable, the hand should be introduced and the child turned, or in the event of the presentation of the placenta being partial, the case may be treated as if of the accidental variety—viz., by rupturing the membranes. I have not tried the method advised by Dr. Simpson and Dr. Radford, of separating the placenta around the os uteri, and allowing it to be expelled first, so am not competent to give an opinion from personal experience.

The form of flooding to which I purpose now particularly to draw the attention of the profession is that occurring after the birth of the child. In every natural case of labour as soon as the child is expelled, more or less blood is lost, and if the case be not interfered with, the placenta will in a short time be expelled. Should, however, hæmorrhage set in, it will then be necessary to cause its expulsion by producing contraction of the uterus. for this purpose the cold hand applied over the pubes, and the uterus grasped whilst at the same time friction is employed, will be useful: the ergot will also produce the most beneficial effect. Should these fail the hand should be gently introduced into the uterus; when, if the retention be from inertia, the placenta will be found loose within it, from whence it can easily be withdrawn. If, however, the woman has lost much blood it may be necessary to wait a little, so as to allow her to recruit her strength. The advice Denman gives on this subject is so much to the purpose that I shall transcribe it. He says—"If there have already been hæmorrhage so profuse as to occasion danger, and the common consequences of loss of blood, as fainting and the like, have already followed, the placenta ought not then to be extracted, nor the patient disturbed, nor any change made till she is somewhat recovered from her extreme debility, as the danger would thereby be increased, and the patient dying during or immediately after the operation, as I have seen and known in several instances."

Hæmorrhage after delivery proceeds from a want of due contraction of the uterus: hence anything that will have the effect of preventing muscular contraction is evidently unfit for the patient. The old practice of giving "after-pain draughts," containing variable quantities of opium, has latterly, very properly, been much discontinued. There are, however, still many practitioners who not only continue their use, but who also strongly recommend opium as a remedy in flooding cases; and strange enough, these very men, if called to a case of malpresentation, with strong uterine action, will administer large doses of opium to allay this action, and at the same time give it in a case of hæmorrhage, where the life of the woman depends upon its due contraction. Does the opium act in one case as a sedative, and in the other as a stimulant to muscular contraction? I think the question can be fairly answered in the negative. It may be said, then, ought opium not to be used in flooding cases? I would say never at the commencement of it, nor until all the means to cause uterine contraction have been tried; at the same time I am perfectly aware that occasionally it becomes one of the most valuable remedies in these cases. I have more than once seen it act

most beneficially in arousing the dormant powers of life when the patient has been reduced to an almost pulseless condition with jactitation. The following will give a good example of the sort of case in which I think the administration of opium not only admissible but required.

*Flooding after Labour.*—Mary Doherty, aged 41, the mother of seven children, was delivered of twins, June 8th, 1846. Both children presented naturally, and an hour intervened between their birth. After three-quarters of an hour's delay the placentæ were expelled into the vagina, from whence they were removed; the uterus contracted firmly, and all appeared well. In a short time, however, the aspect of affairs was much altered, the uterus ascended out of the pelvis, and flooding to a fearful amount took place. I was sent for, and on going into the room found the whole floor covered with blood, the woman pulseless, and apparently at the point of death. The fainting had given a temporary check to the flooding, and I at once proceeded to try to make the uterus contract; the hand dipped in cold water was applied to the hypogastrium, a drachm of ergot of rye given with forty minims of tincture of opium, and a mixture containing half drachm doses of sp. ammon. c. and twenty-drop doses of tinct. opium, given every twenty minutes. Under this treatment, with light covering, cold air, bandage and pad, the hæmorrhage was checked, and she finally made a good recovery. I could, if necessary, mention several cases of fatal flooding clearly traceable to the administration of opium.

Besides the means noticed for checking bleeding, I may mention—gallic acid, galvanism, pressure on the aorta, the hand introduced into the uterus, as recommended by Gooch, transfusion, &c., to some of which I shall again draw attention. Every practitioner is aware that some women are more predisposed to hæmorrhage than others, and it is often a source of great anxiety to themselves, their friends, and their attendant. In many, indeed, this predisposition is so great that we find every labour is attended with serious and alarming flooding. It is in such cases that the treatment recommended by my friend Dr. Beatty will be found so peculiarly valuable: he recommends a practice which may be called the anticipative, and which is calculated to prevent the occurrence of flooding in those whom former experience has given reason to suppose it likely to occur. The plan he adopts is to prepare an infusion with a drachm of the ergot to four ounces of water, allowing the powder to remain suspended. One-half of this infusion he administers just as the head clears the perineum, and the other half when the child has been expelled.

Dr. Beatty has published several cases in which this plan of treatment was most successful; I have only had an opportunity of testing its value in one, and with the best results. *Dublin Med. Press, Sept.* 9, 1846, *p.* 161.

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## 175.—CASES OF PLACENTAL PRESENTATION.

[Numerous cases of this kind continue to be related in the journals; but we do not perceive any improvement of the suggestions and practice which we have given in previous volumes. On the other hand we perceive among some practitioners a want of discrimination in the particular cases which require the extraction of the placenta before the child: and any error of practice in this respect must necessarily be so fatal to the lives of children, if not to the mothers, that we take the opportunity of again placing before our readers the judicious rules adopted by Dr. Simpson, as will be seen in Retrospect, Part xiii., p. 380.]

"Whenever the condition of the mother permits, turn the child; and extract the placenta. The placenta should never be detached first, unless the danger to the woman is so great from exhaustion, as to render turning hazardous; or, unless there exists some obstacle to the extraction of the child, either from distortion of the pelvis or from tumors. Neither delivery

by turning, nor detaching the placenta, ought ever to be attempted, until the cervix and os uteri will safely allow the introduction of the hand. Until this is the case, strict rest, the application of cold, and the use of the plug, will be required. Detaching the placenta will be found the best line of practice, 1st, in severe cases of unavoidable hæmorrhage, with placenta previa, complicated with an os uteri so insufficiently dilated and undilatable, as not to allow of turning with safety; 2nd, in many of the cases in which placental presentation is connected with premature labour, and imperfect development of the os and cervix uteri; 3rd, when the uterus is too contracted to allow of turning; 4th, when the pelvis or passages of the mother are organically contracted; 5th, in cases of such extreme exhaustion of the mother, as forbid immediate turning or forced delivery; 6th, when the child is dead, and when it is premature and not viable."

[By keeping these safe and excellent rules before us we maintain that the practice is good, but the moment we deviate from them, we almost certainly destroy the life of the child, and endanger that of the mother. Mr. Everitt, of Ellesmere, relates the following case.]

Ellen Roberts, aged 17, an inmate of the Union, was attacked with hæmorrhage about twelve o'clock at noon, on Saturday, the 12th instant. I was sent for immediately, and arrived about twenty minutes after the first occurrence of her bleeding. The exsanguine countenance of the patient, the fluttering pulse, the syncope and vomiting, caused by the excessive flooding, made me feel very anxious as to the result of the case. On examination I found the placenta presenting and partly detached from the uterus, the detached part occupying the upper part of the vagina, and the hæmorrhage continuing very profusely. I at once acted upon the principles so strongly inculcated by my esteemed instructor, Professor Simpson, of the University of Edinburgh, and delivered the placenta. The flooding at once abated, but did not stop until cold water had been applied to the umbilical region; then it ceased entirely. A second examination detected the head of a fœtus presenting with one of its hands and forearms, and in the cavity of the pelvis.

The uterus had now lost its contractility, and the balance of life and death continued wavering. Ammonia and brandy were administered every ten minutes for half an hour, so that the tone and beat of the pulse became much improved. This treatment was followed up by half drachm doses of the ergot of rye, every ten minutes. After the third dose had been taken, strong expulsive efforts came on, and a fœtus was expelled, which appeared to be about three months old, and to have been dead several days. No subsequent hæmorrhage occurred, and the girl gradually became convalescent. In this case, and more than probable in all such cases, the hæmorrhage was and is from the uterus, as well as from the placenta, or why did it partially cease after the placenta had been removed, and not altogether before the contraction of the uterine vessels upon the application of cold water to the umbilical region? As to the consequences, nothing dangerous need be anticipated. *Prov. Med. and Surg. Journal, Sept.* 30, 1846, *p.* 465.

[Mr. Stickings, of Lenham, Kent, gives us a case in which he detached the placenta, although the os was in such a state of dilatation that he might have turned in the usual way. He was successful; but we question the propriety of the practice in such a case, and would earnestly advise practitioners to keep steadily in view the rules at the head of this article. Mr. Stickings was summoned to the patient, who was in her fortieth year, and had given birth to eleven children. She had been flooding three hours, and was exceedingly sunk and exhausted: the os uteri was considerably dilated, and the placenta presenting. Mr. S. immediately proceeded to detach it, and as soon as he had accomplished this the hæmorrhage ceased—the uterus acted vigorously, and a living male child was expelled.]. *Med. Gaz., May* 8, 1846, *p.* 845.

[Mr. Wales, of Downham, relates another case, in which he certainly

rescued the mother; but the practice would have been fatal to the child if it had been alive, while we maintain that; after the gush of blood, if he could introduce his fingers and open them between the walls of the uterus and the placenta, he might have adopted the old practice with equal safety to the mother, and with much more security for the life of the child. We merely give this case as an illustration. Mr. Wales says:]

On Tuesday last, the 24th of this month, I was called to Susanna Newton, aged twenty-five years, pregnant for the fourth time. At ten, a. m., I found the patient had been alarmed by a copious show without labour-pains. I directed her to bed, and on examination found the vagina and uterus little prepared for labour. She was kept quiet and cool, and I heard no more of her till three, a. m., of the following day, when I went to her in haste. A profuse flooding had occurred, with slight pains: I introduced my hand slowly, and with some difficulty, into the vagina, and found the os uteri dilated to the size of a crown-piece, and a portion of the placenta lower than the head of the child. I deliberated, without suffering my hand to retreat, on what plan I should proceed. The os was thick, and not dilatable, offering great difficulty to passing the hand and reaching the feet of the child. I had almost determined to administer a full opiate, and wait till there would be safety in the older practice, when, on a sudden, a frightful gush of blood produced syncope, and spreading my fingers open between the walls of the uterus and placenta, I detached the latter with a sweeping motion of my hand, when a strong pain almost instantly expelled it and my hand into the vagina. The hæmorrhage from this moment ceased, and in an hour moderately energetic pains expelled a seven months' dead child.

It was gratifying to me, that without tedium and exhaustion to the poor woman, the case was so quickly ended, and I do not remember a single instance in my own practice where I was so fortunate as to preserve the life of the child in such a case. A brother of mine, now deceased, going to the assistance of a female midwife, found the placenta in the bed, and the woman recovering from her danger. This was to him, at this time of day, inexplicable, and has often been related to men of experience, exciting only their incredulity. *Prov. Med. and Surg. Journal, April* 8, 1846, *p.* 158.

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176.—CASE OF SEVERE GASTRIC IRRITATION IN PREGNANCY.—By D. O. Edwards, Esq., Brompton.

[This case was under the care of Mr. D. O. Edwards, of Brompton, and he gives the following history of the treatment: The patient, twenty-eight years of age, had borne three children, and had had no abortion; she entered the sixth month of her pregnancy in May. Her previous health was good, but on the 25th she experienced tic doloureux in the face, accompanied after a time with nausea and vomiting of bilious and other matters.—She had been attended by another practitioner, who considered the gastric irritation was due to an obstruction in the duodenum, and gave her energetic doses of calomel and colocynth and other purgatives, which, of course, had no permanent effect. Opiates and effervescent potions were attended with like success. Dr. Robert Lee saw the patient on the 28th, who tried hydrocyanic acid, and every anti-emetic remedy that could be thought of. Blisters, calomel enemata, hyd. c. creta, hyoscyamus, dilute sulphuric acid, sulph. magnesia, infus. of roses, &c., were used in vain.

On the 2nd June, Mr. Edwards, with Dr. Lee, saw the patient early in the morning. She was much exhausted. Pulse 120, but with considerable power, a tendency to cerebral congestion, vomiting of a dark fluid, containing dark-green flocculi, and she was complaining of great weight and insensibility of the right side, from the shoulder to the ilium. No acute abdominal pain on pressure, except over the pylorus. No food could be kept on the stomach, and her strength and spirits were flagging.

Leeches were applied to the epigastrium, and opiate lotions, and mustard cataplasms to the right hypochondrium. To prevent cerebral congestion, ice was constantly applied on the head. To support the patient, beef tea and thick gruel were injected per anum. The vomiting, however, did not cease, although it was somewhat less violent.]

3rd. Dr. Lee suggested the propriety of producing labour as the only means of saving the patient. I felt a hesitation, and as another opinion was necessary, Mr. Blagden was called in. That gentleman examined the patient carefully, did not perceive the immediate necessity of sacrificing the child, and recommended certain remedies, which were to act upon the liver. These were employed without the desired effect, till the 4th. The condition of the patient was now much deteriorated: and pulse 140; tongue loaded; bowels torpid; vomiting unremitting. She was restless and anxious. The proposition of Dr. Lee was acceded to, and the membranes were ruptured. An ounce or two of the liquor amnii flowed into the vagina, and a small portion continued to trickle through the os externum. The os tincæ was dilated to the size of a shilling. No signs of labour appeared during the fourth, and the vomiting was hardly, if at all, mitigated.

Short intervals of sleep were obtained, but the patient presented, on the morning of the 5th, no visible improvement. The dilatation of the os tincæ had increased but a very little; the discharge of the liquor amnii was inconsiderable; and the strength of the patient had still further diminished. She was seen, at nine, a.m., by Dr. Lee, who felt great anxiety for her safety. He strongly urged the necessity of taking away the child artificially, in the course of the day, if natural labor did not come on. In the interim, it was determined that I should provoke the uterus, which was perfectly torpid, into action, by introducing the fingers every hour into the mouth of the womb, and distending the cervix cautiously. This was done regularly until six o'clock in the evening, and the uterus admitted the whole hand; and yet no pain was excited: the head presented, but its position was not forwarded.

During that day, the stomach of the patient was more quiet; it retained some solution of isinglass, but the pulse was frequent and very feeble; the bowels inactive, and the patient complained that her head was as insensible as wood, and she exhibited signs of approaching delirium. At six, p.m., Dr. Lee arrived, when the patient had just experienced a little pinching pain in the bowels, and the pulse had improved a little. It was inferred from these circumstances, and the dilated state of the os tincæ, that natural labour was approaching, and that the use of the perforator might be avoided; she was accordingly left in my charge. Soon afterwards, a feeble labour pain was felt. This was succeeded by others; the head descended; a small stream of blood flowed from the womb, amounting altogether, before delivery was completed, to about four fluid ounces. The labour pains exhausted the force of the patient, the pulse disappeared, and death from collapse seemed imminent. I gave her full doses of brandy; and thinking the contractility of the womb my greatest security against the threatened hæmorrhage, I did not assist the delivery with the vectis until the head was at the os externum. A sixth-month fœtus was expelled at eight, p.m.

The fœtus lived only about ten minutes, and therefore required but little attention. Immediately upon detaching the child, the mother fell supine in a state of extreme prostration; no pulse could be felt at the wrist, but the heart acted violently and irregularly, and the surface of the body became of unequal temperature; small doses of brandy were given repeatedly, and in half an hour she became composed enough to have the afterbirth removed. This was unusually large, the placenta being very much congested; and a fibrinous coagulum, some days old, of the size of the

doubled fist, was adherent to it. No hæmorrhage succeeded, and the usual precautions were taken to bandage the abdomen, &c.

[The patient continued very low and weak for about four hours; the stomach, however, retained food, and a good natural motion took place six hours after delivery. She gradually acquired strength; the nausea and vomiting did not return; but the disorder of the hepatic system continued to require the use of mercurials and purgatives. In a month she went to Brighton, perfectly recovered.]

A careful consideration of all the facts here alluded to, may, Mr. Edwards thinks, justify us in coming to the conclusion that when, in a pregnant woman, in any stage of her gestation, severe vomiting, wearing away the strength of the patient, and preventing proper nutrition, shall have for several days resisted all the usual remedies, whilst the fever continues unabated, and the vital forces are failing, we ought not to delay a moment in procuring the expulsion of the fœtus. *Lancet, Sept.* 19, 1846, *p.* 321.

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177.—CASE OF PLACENTA REMAINING THREE MONTHS IN THE UTERUS, AND ITS EXPULSION BY ERGOT OF RYE.

M. Malagodi reports the following case:—A woman, aged 30 years, was delivered three months ago. There remained since that time a slight uterine hæmorrhage, with pains and a sense of weakness. The uterus was a little swollen, resistent, and as if occupied by a foreign body; the orifice was almost completely closed. It was said that the placenta had not been expelled after the last labour, and that the midwife, not having been able to extract it, abandoned it to the expulsive efforts of nature. M. Malagodi saw no other indication than the use of ergot of rye. The first doses caused uterine contractions, and she expelled a fleshy body, compact, of a deep red colour, having the form of the uterine cavity. Her recovery was rapid and complete.—Il Racoglitore Medico, and Gazette Medico-Chirurgicale, 24 Janvier, 1846.—*Monthly Jour. of Med. Science, June,* 1846, *p.* 445.

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178.—IPECACUANHA IN UTERINE HÆMORRHAGE.—By J. Higginbottom, Esq.

[Mr. Higginbottom attended a patient in three of her confinements, in 1821, 1823, and 1826. Each time, after the separation of the placenta, the most severe hæmorrhage took place. The usual remedies were used—cold to the abdomen—pressure to induce contraction of the uterus—opiates—wine and brandy. In her third confinement, Mr. H. despaired of saving his patient—he had given her half a pint of brandy and a pint of port wine, but still there was no amendment, and it occurred to him that on former occasions, she never was any better until the contents of the stomach were evacuated—therefore, he at once decided on giving an emetic. He observes:]

I directly gave her half a drachm of ipecacuanha; a full vomiting soon succeeded, and a large quantity of fluid was ejected. I was much struck with an expression of my patient, which I had several times heard before in similar cases, after vomiting. After a deep sigh, she said, "Oh! I am better; I am better now." The hæmorrhage ceased directly, and did not return; the symptoms of sinking abated, and the patient appeared in her natural state of body, but very feeble. A little plain gruel was all the nutriment given her, and she recovered gradually from her weak state. I attended the same patient three times afterwards, in the years 1827, 1829, and 1831, and what is very satisfactory in favour of the secale cornutum, which was about that time becoming more used in this locality, I gave, in every case, half a drachm of the powder before the birth of the child, a similar

dose after the birth, before the separation of the placenta. This remedy had the desired effect of preventing the hæmorrhage, so that I had no further need of the ipecacuanha, or, indeed, of any other remedy.

Several years ago, I had a patient, on whom the secale cornutum had no effect in preventing the hæmorrhage, and I gave the ipecacuanha with a favourable result. For nearly twenty years, I have lost all confidence in the diffusible stimulants, such as wine, brandy, &c., in uterine hæmorrhage, from a conviction that they increase the arterial circulation, and, consequently, the hæmorrhage; and I find that opinion corroborated by the writings of Drs. Clutterbuck and Ramsbotham. The utility of ipecacuanha in uterine hæmorrhage has been proved by Dr. Osborn, of Dublin, but I am not aware that he has recommended it in extreme cases of exhaustion or sinking.

*Prov. Med. and Surg. Journal, July* 1, 1846, *p.* 300.

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179.—INFLAMMATORY ULCERATION OF THE CERVIX UTERI DURING PREGNANCY, AND ON ITS INFLUENCE AS A CAUSE OF ABORTION. —By J. H. Bennet, M. D., London.

[Dr. B. says, I have devoted great attention to this disease, and have found it not uncommon, and that it plays a most important part in laborious pregnancies, and that it is a very frequent cause of abortion. The local symptoms existing during pregnancy are mostly the same as during the non-pregnant state, but more or less modified and obscured by the changed position of the uterus.]

The sensation afforded to the touch differs considerably from that which is perceived, under similar circumstances, in a non-pregnant female. As is well known to all accoucheurs, the healthy uterine neck in the pregnant female undergoes successive changes as pregnancy advances, and as the uterus increases in size—changes which may be said to consist in its gradual enlargement and softening, in the gradual opening of the os, and in the change of its position; for instead of being nearly in the direction of the axis of the lower outlet of the pelvis (its usual position) as the uterus ascends into the abdominal cavity, the cervix becomes retroverted, and partially assumes the direction of the axis of the upper pelvic outlet. On the other hand, it will be remembered that increased volume in the cervix, an open state of the os, and retroversion, coupled with a velvety surface, are the principle characteristic indications, to the touch, of inflammatory ulceration of the uterine neck in the non-pregnant state.

When inflamed, the tumefied cervix is more or less generally indurated, whereas, in the natural state, in the first months of pregnancy, it is enlarged, but soft, throughout its entire texture; the os is more open than is consistent with the state of pregnancy; a marked soft, velvety, or mossy sensation is conveyed to the finger from the surface of the open os, and from the parts immediately adjoining.

When the pregnancy is not known, the existence of an inflamed ulcerated cervix will often be recognised by the above symptoms without the pregnancy being suspected; this has repeatedly occurred to me. If, however, the inflammation is severe, and the ulceration extensive, the indications furnished by this mode of exploration alone are so decided, as often to enable us to recognise at once the nature of the case. The cervix is more voluminous, or the os is much more open, than is consistent with the period of the pregnancy; and it is also more or less generally indurated. The open os, instead of presenting a smooth surface, presents a very peculiar feel, of which the word velvety scarcely conveys an idea.

The surface of the open os and cervix sometimes appear fungous to the touch, or, in severe cases, of a quaggy, pultaceous consistency. In the midst of this fungous surface may be felt, in some instances, small, moveable, superficial indurations, of the size of a large pin's head, or larger,

constituted by indurated and hypertrophied mucous crypts. On withdrawing the finger, it will generally be found covered with muco-pus, and sometimes tinged with blood; indeed, the vagina generally contains a great quantity of muco-pus, especially in its upper region.

On examining with the speculum, the vulva and vagina are found red and congested, as is the case in pregnancy; but the congestion is carried to a greater extent than it naturally would be, and the redness is much more vivid. The cervix being directed backwards, retroverted, after the first few months of pregnancy, it is often rather difficult to bring it fairly into view; the difficulty may, however, always be overcome, by using either the bivalve or the conical speculum, according to the case. When the cervix has been brought fairly into view, it will be found tumid, congested, of a livid hue, voluminous, soft, or only partially indurated: and on one or both lips, generally, penetrating into the cavity of the os, is seen a more or less extensive ulceration, sometimes covered with deep, long, fungous granulations. This great development of the granulations—this luxuriant fungousness of the ulcerated surface—is so marked in some cases, and so seldom observed in the non-pregnant state, that when it is found, it may be said itself to constitute a symptom of pregnancy. I have, in several instances, recognized the gravid state of the uterus from the peculiar appearance alone of an inflammatory ulceration of the cervix. The ulcerated surface, as I have said, is generally covered with a great quantity of muco-pus, but does not bleed so readily as might be supposed from the luxuriance of the granulations. As I have stated in my treatise on uterine inflammation, the fungous character of ulceration of the cervix in pregnant women is sometimes so great, that it might occasion, in the minds of persons unacquainted with the above facts, the impression that the patient is affected with malignant ulceration of the organ. I have generally found ulceration of the cervix in pregnant women beginning to assume this fungous character about the end of the third or fourth month of pregnancy, increasing gradually as it progresses.

If the cervix is previously hypertrophied and indurated, it begins to soften about the same period, the softening first taking place in the interval of the segments, if the induration is lobular, and subsequently pervading the entire os. This gradual softening of the hypertrophied and indurated cervix, which appears to take place under the influence of the changes that occur in the uterus during pregnancy, no doubt accounts for induration of the os, at the time of labour, being so very rare, when compared with its great frequency in females who present it as the sequelæ of chronic inflammation. The softening itself is the immediate result of the gradually increasing vitality of every part of the uterine system during pregnancy—a physiological condition which also explains for the marked luxuriance of the ulcerations.

The pains in the lumbar region are generally very severe, and often referred directly to the sacrum itself. They are continued; not merely occasioned by fatigue or over-exertion, but always to be perceived, night or day, on the patient analyzing her sensations—a very important distinction in ulceration of the cervix—the lumbar pains of weakness being occasional or intermitting only. The pains in the hypogastrium, and in the ovarium regions, are also often very severe, and ascend high in the developed abdomen, so as to occupy all, or a considerable portion, of its lower half. The purulent secretion is generally profuse; but as there is often a considerable white flux from the congested parietes of the vagina, the pus from the ulcer becomes mixed with it, and loses its characteristic appearance. The patient thus appears merely to have a white leucorrhœal discharge, unless the touch be resorted to, when the finger is withdrawn covered with pus. In some cases of ulceration in incipient pregnancy, I have known there to be no leucorrhœal discharge, pus being secreted only by the ulcerated surface, and being absorbed in the vagina.

[The general symptoms are the disturbance which takes place in the general health: pains which by continuance cause loss of appetite, rest, strength, and flesh, accompanied with confirmed indigestion, cephalalgia, and palpitation. There is also the constant desire to retain the recumbent position. These symptoms also characterize approaching abortion, and they are, says Dr. Bennett, the unsuspected cause of a large proportion of the miscarriages which occur.

*Treatment.*—Inflammatory ulceration of the cervix uteri occurring or existing during pregnancy, should be treated by pretty nearly the same means as when existing in non-pregnant women—that is, by local and by general agents, but more especially by the former. Astringent vaginal injections, repeated cauterization of the ulcerated surface, continence, and rest in the horizontal position, are the principal local means to be resorted to. As the general treatment must be guided by the general state of the patient, which may vary considerably, it is impossible to lay down any precise rules. I would merely remark, that mild tonics are the remedies which are the most frequently indicated, on account of the generally debilitated state of the system. The caustic that I most frequently use is the nitrate of silver, which must be freely applied, and carried into the cavity of the os, if the ulceration extends so far, as it mostly does. I rather avoid the more energetic caustics, such as the acid nitrate of mercury, wishing to localize as much as possible the action of the remedy. I do not, however, hesitate to apply it to the luxuriant fungous ulcerations which I have described, and which the nitrate of silver often does not modify with sufficient energy to insure cicitrization.

The milder forms of ulceration—those which are observed in early pregnancy—often heal with surprising rapidity, considering their character. This is sometimes the case with the fungous ulceration of more advanced pregnancy, but much less frequently. The latter are mostly intractable and difficult to heal, but less so, perhaps, than ulcerations of a similar character would be in non-pregnant females. In the pregnant woman the luxuriance and fungosity of the ulceration is not so much the result of the intensity of the disease as of the increased physiological vascularity and vitality of the uterus, which increased vascularity appears likewise to facilitate the healing process.

The injections which I use are the same as in non-pregnant women—solutions of sulphate of zinc, alum, acetate of lead, tannin, &c., for further details respecting which I must refer to my work on uterine inflammation. I am not in the habit of resorting to leeches, or to scarification of the cervix, in these cases, because I have not hitherto found these modes of treatment necessary; but I have no doubt that they might be resorted to without fear were they deemed necessary. It is, however, I have hitherto thought, most prudent not to adopt any mode of treatment which is calculated to interfere much, even momentarily, with the circulation of the pregnant uterus. I do not, either, use the cold hip-bath in these cases, for a similar reason.

The application of caustic to the ulcerated surface, occasions, as in the non-pregnant females, but very little pain at the time, although rather severe pain sometimes comes on in the inguinal and hypogastric regions in the course of a few hours, lasting for some hours, or for a day or two. The leucorrhœal discharge is also often tinged with blood for one, two, or three days afterwards, as is the case with ordinary ulceration. This slight show need occasion no alarm whatever, as it is purely local, and the result of the application of the caustic to an ulcerated surface. Under the influence of this treatment, the ulceration soon assumes a healthier, less luxuriant appearance, then begins to cicatrize, and finally heals.

Once the progress of cicatrization has fairly set in, the irritability of the ulcer and of the surrounding tissues having been subdued, there is but little fear of abortion taking place. But until this is the case, abortion is

imminent, and may, indeed, be feared daily. It is well, therefore, to apprise the patients of this circumstance, as otherwise they would be certain to attribute the miscarriage, were it to occur, to the instrumental examination. This leads me to say a few words respecting the use of the speculum in these cases. The only circumstance which can explain the fact of the frequent existence of ulcerative inflammation of the uterine neck during pregnancy having hitherto passed unperceived by accoucheurs and pathologists, who in France freely resort to instrumental examination in uterine disease, is the general impression among them that the use of the speculum in women is dangerous, and likely to give rise to abortion. Such a notion, however, is most unfounded, as I have become convinced from my own experience. A careful instrumental dilatation of the vagina in a pregnant female is of itself perfectly harmless, as the slightest reflection will show. On the other hand, it is only by combining instrumental treatment with the other means employed, that the ulcerative disease can be cured; and as I have stated, the chances of abortion taking place under the influence of the ulcerative disease, I have found so great, as to render it imperative to adopt every curative means in our power.

As a general rule, the application of any caustic to the ulcerated cervix uteri, although not very painful at the time, was followed by an increase in all the local pains, as also by an increase in the leucorrhœa, which very frequently became sanguinolent, if not so before. This exacerbation generally lasted two days, but sometimes four, five, or six. After its decline, however, the patient was generally easier and better than before the application of the caustic. *Lancet, Sept.* 26, 1846, *p.* 354.

[Dr. Bennet illustrates his opinions by two interesting cases, one of which we abridge. This was cured without the occurrence of abortion. The patient, aged twenty-nine, was admitted into the Western General Dispensary, April 24, 1846, and presented the appearance of one labouring under confirmed organic disease. The nervous and muscular system much enfeebled; constitutional fever; digestive function much disordered, and has restless nights; bowels constipated; menstruation absent since February last, but was then very abundant, and almost amounting to flooding, being succeeded by a repeated sanguinolent discharge, which she attributed to the menses.]

On examining digitally, the following was found to be the condition of the uterine organs.—Cervix voluminous, indurated, especially the anterior lip; velvety fungous sensation around and in the os, more especially marked on the inferior lip; cervix very much retroverted.—Speculum; vagina very injected, containing pus; cervix attained and exposed with difficulty, even with the bivalve speculum, owing to the extreme retroversion; the anterior lip presents considerable chronic hypertrophy and induration, but is only ulcerated in the immediate vicinity of the os; the inferior lip and circumference of the os presents a fungous, bleeding, ulcerated surface; uterus slightly enlarged.

The great and rather dark injection of the vagina, the fungous character of the ulcer, and the absence of any considerable flow of blood since the end of February, inclined me at first to suspect the existence of pregnancy but I nearly discarded the idea on reflecting, that she had evidently been suffering from ulceration of the cervix for years; that, as she had been subject for some months to continued bloody discharges from the ulcer, the existence of menstruation might have passed unperceived, and that the vaginal redness might be merely the result of inflammation. I determined, however, to be cautious in the treatment, as there was some doubt as to the exact nature of the case. The nitrate of silver was freely applied to the ulcerated surface; weak sulphate of zinc vaginal injections (half a drachm to the pint), were prescribed, as also a light diet, perfect rest, the infusion of diosma, with carbonate of soda internally, and an occasional mild purgative.

May 1st. The free application of the nitrate of silver was attended with but little uneasiness or pain, but was followed by rather severe pain for the two ensuing days. On the third day there was a considerable discharge of blood, and from that time she was easier. The nitrate of silver was again used, as also on the 8th, the other means of treatment being continued, and the general state remaining the same.

15th. The ulceration still presented the same fungous appearance, and excreted blood continually; she had had a sanguinolent discharge for the last week, without intermission. The nitrate of silver, although freely employed, being evidently powerless to modify the ulceration, I applied the acid nitrate of mercury. Much more pain was experienced than on the previous cauterization, the patient nearly fainting. Same treatment.—The flow of blood was arrested for two days, and then came on again, only lasting, however, three days. Subsequently, the vaginal discharge assumed a yellow purulent character only. At my next examination I found the character of the ulceration favourably modified; it was no longer so irritable and disposed to bleed on being touched. The acid nitrate of mercury was again applied.

June 4th. Great pain was experienced after the last cauterization; the pains being, as usual, principally in the lumbar and ovarian regions; she is now much easier, more so, indeed, than she was before the treatment was commenced. There is an abundant yellow vaginal discharge, but no blood; mucous membrane of vagina less red; ulceration beginning to present a healthy appearance, and to heal at the circumference. On examining attentively the uterus, I found that it had evidently increased much in size, and was rising from the cavity of the pelvis. Since I had attended her, there had been no continued show of blood which she could consider equivalent to menstruation, although she had been losing blood, more or less nearly every day. She had lately, also, fainted repeatedly, which had never occurred hitherto, except during pregnancy. The above data led me at once to conclude that the patient was pregnant, and that, consequently, my first surmise was correct. Such proved to be the case, the uterus continuing to increase, and all the symptoms of pregnancy becoming gradually more and more decided. She was still at this time so weak, that she could scarcely walk into the consulting room; the tongue, however, was more natural; she was beginning to feel a slight return of appetite, and could keep a little fish on her stomach. Considering that the system would now be able to bear a more tonic medication, I put her on the citrate of iron, continuing the periodical application of nitrate of silver to the ulcerated surface, and the use of the astringent vaginal injections, tepid hip-baths, &c.

From this epoch, under the above treatment, the case continued to do favourably. The lumbar, ovarian, and hypogastric pains gradually diminished, as also did the leucorrhœal discharge; the cicatrization of the ulcerated cervix progressed with slow but sure steps, the circumference of the ulceration healing first, and then the cavity of the open os. The induration of the anterior lip of the cervix gradually melted as pregnancy advanced, the entire cervix becoming perfectly soft to the touch. The general health gradually improved as the local inflammation subsided. At one time, she had for several days strong uterine bearing-down pains, similar to what she had experienced previous to her miscarriage. They were subdued, however, by rest, and repeated injections of laudanum into the rectum.

July 23d. The ulceration was completely healed. There was scarcely any leucorrhœal discharge, what little there existed being principally mucus. The cervix was soft throughout, but rather more voluminous than it naturally is at this period of pregnancy. The general health was very much improved in every respect: the fainting had ceased; the appetite was better; the irritability of the stomach had disappeared; and the general nutrition was improving. She still felt occasional pains in the loins and uterus,

and was very weak. She had not felt the child, and fancied it was dead, of which, however, there was no other evidence.

*Remarks.*—The above is a most interesting illustration of the vitally important facts which I have recently laid before the profession, and shows what a decidedly practical bearing they have upon the practice of obstetricity. Nor is it a rare case, selected to give importance to my previous statements: I have seen many of the same nature within the present year, and have no doubt but that there are in this country, at the present time, thousands of females whose health and offspring are similarly endangered.

In looking over what I call the uterine history of this patient, we find that she had menstruated early, and that menstruation was from the first, irregular, painful, and abundant. This I often remark to have been the case with patients who in after-life become subject to the various forms of subacute uterine inflammation that I have described. It would seem as if the uterus in these females, from the first dawn of its physiological existence, were in a state of orgasm, or excited vitality, which renders the accomplishment of the monthly function difficult, and which also appears to predispose to inflammatory disease. Married early in life, her first labour was instrumental, but does not appear to have left any recollection of subsequent morbid symptoms in her mind. Two other natural labours follow, and then three miscarriages.

During the entire period of these miscarriages, however, severe uterine symptoms were present, as also a profuse yellow vaginal discharge, and severe uterine and lumbar pains, accompanied by great general debility. From that time she had never been free from these symptoms. Her gengeral health improved during an absence from town—a fact which I daily observe in all forms of chronic uterine inflammation; but the improvement was, as usual, only temporary. She again became pregnant, and was in a very bad state of health during her entire pregnancy, being daily expected to miscarry, and obliged repeatedly to have recourse to the application of leeches, owing to the intensity of the uterine pains which she suffered. From the time of her confinement until I saw her, she gradually became worse, and when she applied to me, was in a most deplorable state of pain, weakness, and debility. I firmly believe, from the history of the case, that she had been laboring under inflammation and ulceration of the cervix for years, and that the existence of the uterine disease was the cause of the miscarriages and of the last laborious pregnancy. I do not think it would have been possible, when she came under me, to prevent miscarriage again occurring, with possible flooding and other serious results, had not the disease subdued. On the other hand, how could any but energetic local treatment hope to modify a large fungous bleeding surface, such as the one I have described?

It will have been remarked that the nitrate of silver was powerless to modify the vitality of the ulcerated surface, so as to bring on a healthy action. This is often the case with soft, flabby, bleeding ulcerations in this region, and when it is so, I resort to a more powerful caustic—generally the acid nitrate of mercury. This rule I follow in pregnant females, as well as in non-pregnant. The end to be attained is the modification of an unhealthy inflammatory sore; and if mild means will not suffice, there is no alternative; more powerful ones must be resorted to. The anterior lip of the cervix was, when I first examined the patient, considerably hypertrophied and indurated. The gradual softening of the indurated tissues as the pregnancy advanced, and as the inflammation subsided, is remarkable and important. This softening (which I now find to always take place in pregnancy) partly accounts for the rarity of induration of the cervix at confinement, although it is so common, as the result of inflammation, in the non-pregnant state. It also illustrates the modus operandi of deep cauterization of the cervix in the treatment of chronic intractable hypertrophy of that organ. As the local disease diminishes, we see the general health rally,

and the pregnancy become more normal; until a short time after all inflammation has disappeared, we find that the patient has lost nearly all her old pains and morbid symptoms, and that her health is better than it has been for years. Considering the amount of disease, the duration of treatment was not great. The ulceration was healed, and all uterine inflammation subdued, within two months. This would not have been the case, I think, in the non-pregnant state, with the same extent of disease; but, as I have stated, these ulcerative uterine inflammations, although so much more formidable in appearance with pregnant women than with the non-pregnant, seems often to heal more rapidly in the former than in the latter. This case is a proof of the correctness of what I have before asserted—viz., that extensive disease of the cervix does not prevent impregnation in some cases, although it may, generally speaking, act as an obstacle. I have now seen so very many cases in which, from the history of the patient it is evident that the disease existed previous to impregnation, that my opinion on this point is firmly settled.

*Lancet, Oct.* 24, 1846, *p.* 446.

[The following is another interesting case related by Dr. Bennet, in another number of the Lancet. He was consulted at the Western Dispensary, by a delicate woman, thirty-nine years of age, for a severe pain in the lower part of the abdomen and back, accompanied with leucorrhœal discharge. She had a miscarriage eight months before this, but she had not menstruated for the last three months. On examination, the cervix uteri was found low down in the vagina, hypertrophied and indurated slightly; this was in Nov. 1845. The treatment consisted in weekly cauterization of the ulcerated cervix with pernitrate of mercury or nitrate of silver, astringent vaginal injections, aperients, rest, and light diet. Dr. Bennet adds:]

On the 4th of December, on attempting to examine my patient as usual, to my surprise, I found that since the previous examination, a week before, retroversion of the uterus had taken place. The cervix was high up behind the pubis, and could be scarcely reached with the finger, whereas the enlarged uterine fundus was lying low in the vagina, covered by its anterior parietes, and of considerable volume. It at once occurred to me that the patient was pregnant—a fact which I had previously suspected, and that retroversion had taken place, owing to some effort which she had made. I could not, however, bring her to recollect any unusual exertion, or shock, to which it might be attributed. She recollected nothing of the kind, nor was she aware that anything unusual had taken place, although she had felt, she said, much more heaviness and pelvic weight than usual, for the two or three days previous. I then attempted to reduce the uterus, but without the slightest success, although I resorted to all the usual means employed under such circumstances, including every possible change in position. On introducing the medius and index of the left hand into the rectum, I was able to grasp, as it were, the posterior region of the enlarged and retroverted uterus, but without being able to move it from its abnormal position. These efforts to reduce the retroverted uterus by position and manual manœuvres, were several times renewed at intervals of a few days, but without any more success; the patient all the while experiencing no other inconvenience from the altered position of the uterus, than increased weight and bearing-down. There was no difficulty in passing the urine, the cervix, although behind the pubis, not pressing against the urethra so as to diminish its calibre. Not being able to expose the ante-verted cervix with the speculum, owing to its position, I was obliged to suspend the cauterization of the ulceration, and to trust to the astringent injections alone for its treatment.

[On the 2d of January Dr. Bennet again examined his patient, and found that the uterus had increased very much in size since he first examined it, and the cervix pressed so much upon the urethra, as to occasion dysuria. In consequence of there now being doubt as to the existence of pregnancy,

from the rapid increase of the uterine tumour, and from the retroversion being irreducible, Dr. Bennet considered it highly necessary to use Dr. Simpson's uterine sound, since dangerous symptoms would certainly result from allowing the uterus to remain in the position it was in, and if pregnancy actually existed, abortion was all that might be expected to follow; in order, therefore, to determine upon the real nature of the case, he held a consultation with his colleagues. He observes:]

The above views having received, after mature deliberation and examination, the sanction of my colleague, Mr. Ancell, surgeon to the dispensary, and of an experienced physician-accoucheur, I proceeded to introduce the sound. This I found it impossible to effect in the lithotomy position, owing to the situation of the os behind the pubis; but on placing the patient in the usual obstetric position, the instrument, slightly curved, passed into the uterine cavity without any difficulty. Once within the uterus I made it describe, without any difficulty, a semi-circle, so as to bring the extremity of the instrument under the abdominal parietes, about a couple of inches above the pubis. Here I distinctly felt it, as did also the physician alluded to. On introducing, however, the right index into the vagina, the large tumor which occupied the pelvis was felt as distinctly as ever. Although the uterus appeared raised by the sound above the pubis, the tumor did not seem to have been moved. The sound was then gently withdrawn. No pain had been experienced by the patient, nor was a drop of blood, or of any other fluid, lost.

The result of this examination was to convey the impression that the woman was not pregnant, that the pelvic tumor was not in the uterus alone, and that she was laboring under some ovarian tumor which had contracted extensive adhesions with the posterior wall of the uterus, and had, in its fall into the pelvis, dragged the uterus down. The investigation was not then pushed any further.

On the fifth morning from the day on which this examination took place, I was sent for to see this patient, who had miscarried during the night, giving birth to a four-month's dead fœtus, which appeared to have been dead some time. The examination with the sound, she stated, had not been followed by any pain, nor by any loss of serum or blood; only during the last few days she had experienced very great difficulty in passing her water. The night before, she went to bed as usual, but was taken with labour-pains soon after twelve, and was delivered of the fœtus about five.

[The patient gradually recovered from her miscarriage, when an examination of the cervix uteri was again made; it was found in exactly the ulcerated condition that it was when the first examination was made; the original plan of treatment was therefore resumed, and a cure was slowly but progressively effected. Dr. Bennet is of opinion, that the abortion which she had eight months before was caused by the ulceration of the cervix; he considers this a frequent cause of miscarriage. This case shows that impregnation may occur during the existence of inflammatory ulceration of the uterine neck, which Dr. Bennet very much doubted when he wrote his Treatise on Uterine Inflammation.] *Lancet, July* 25, 1846, *p.* 94.

[The acid nitrate of mercury is a fluid caustic. It is made as follows:—To four parts of mercury add, in a retort, eight parts of nitric acid; as soon as dissolved, reduce to nine parts by evaporation. This fluid is a dense solution of the deuto-nitrate of mercury in an excess of acid.]

*Lancet, Aug.* 22, 1846, *p.* 228.

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180.—EXCISION OF THE CERVIX UTERI FOR CARCINOMATOUS DISEASE.—By J. Y. Simpson, M. D., Professor of Midwifery in the University of Edinboro', &c.

[Dr. Simpson has performed the operation of excision in eight cases, five for carcinoma, and three for excrescences or morbid structures.]

*Method of Operating: Complications and Consequences.*—In performing the excision of the cervix uteri, in the three instances I have detailed, and in the other cases in which I have operated, I have proceeded on the following plan:—I have fixed one or two vulsella into the outer or vaginal side of the diseased cervix, as high as it was possible to insert them, and, by the purchase which they afforded, have gradually and cautiously dragged this part down in the lines respectively of the axis of the pelvic brim, cavity, and outlet, till it appeared so far beyond the vulva as to allow me to cut through the base of the protruding cervix. In one or two cases I used a knife in making the incisions. But in consequence of the powerful retraction under which the cervix uteri is placed during the operation, it is difficult, or indeed impossible, to make the incisions in this way so equable and perfect as to remove with certainty all the diseased part. After a partial cut or two the uterus is strongly retracted at the points of incision, and the remainder of the operation requires to be finished with the line of incision thus rendered irregular and confused.

A pair of large, curved, blunt-pointed scissors, such as were used in this operation by Osiander and Dupuytren, is in this respect preferable. We are enabled by them to surround and embrace the whole cervix at once; and having cautiously and carefully adjusted their edges to the very points which we wish to divide, and thus calculated, at this preliminary step, the exact limits of the incision, we may then immediately complete the amputation of the part, by one or two strong and rapid strokes of the instrument. The blades must be placed around the cervix, above the line of the teeth of the vulsellum; and then our object is (as it were) to cut out the vulsellum along with the whole inferior and diseased part of the cervix, in which it is fixed. The operation is much facilitated by the labia being strongly pressed aside by broad copper spatulæ.

I have always placed my patients upon the face, the body being situated across the bed, and the lower extremities hanging over it, as in the operation for hæmorrhoids. We are thus enabled to make our incision through the cervix uteri from behind forwards, instead of from before backwards—a matter, in my opinion, of no small moment. For if we cut in this latter direction, viz., from before backwards, we should sometimes run a great danger of opening into the peritoneum, which stretches downwards so much more behind than in front of the cervix uteri, and offers a very thin wall of partition between the cavity of the vagina and the cavity of the abdomen. Latterly, I have found the first portion of the operation, namely, the seizure and traction of the cervix uteri, much facilitated by using a very large and strong vulsellum, made with the common loose joint of the obstetric forceps, instead of the usual fixed pivot or scissors joint. With the common scissors-jointed vulsellum, whilst we are intent on fixing the teeth of one blade in a proper situation, the teeth of the other blade are always apt to become entangled in the tumor or walls of the vagina itself, and thus impede and embarrass the operator. But with the modification of the vulsellum that I have alluded to this difficulty is avoided, for the individual blades are introduced, adjusted, and fixed, separately and successively; and then, afterwards, they are easily united together for further use. Besides, in this way, we far more readily effect what are, I believe, the two principal secrets in the operation, viz., 1st: We fix both blades of the instrument, and more especially that corresponding to the diseased lip, as high upon the cervix, and as near its line of reflection upon the roof of the vagina as possible; and 2ndly, by making our line of incision immediately above the hold of the vulsellum (as if our object were to cut out that instrument and the part which it embraces), we secure this important point, that the incision which we make is more likely, than if we followed any other plan, to pass through a stratum of healthy tissue, as we thus inevitably remove the whole vaginal portion of the cervix uteri, and the diseased structure of which it is the seat. In thus attempting to insert the vulsellum as high as possible in the cervix,

we shall succeed far better by guiding it directly to the point required by the finger and the sense of touch, than by attempting to direct it by the speculum and the sense of sight. In fact, if the cervix is, as generally happens, at all much increased in size, it is, of necessity, utterly impossible to see, with any speculum, the part in which the teeth of the vulsellum should be fixed—that part lying much higher than the sphere of vision.

Several forms of danger have been found to attend upon excision of the cervix uteri. A fearful variety of nervous depression is alledged by some authors to supervene occasionally upon the operation. I have seen no instance of it. Severe hæmorrhage sometimes occurs, but it is much rarer than we might *a priori* expect. In only one case have I met with it to any considerable amount, and in that instance it was readily and effectually restrained by the plug. Out of nineteen private patients operated on by Lisfranc, Pauly avers that four died within twenty-four hours. Subsequently there is further danger to the patient from inflammation kindling up in some of the uterine structures, or in the peritoneum itself. Out of the eight cases in which I have operated, seven recovered perfectly. The remaining eighth patient recovered so far as to leave her bed-room, but was then, from an unfortunate domestic quarrel, subjected to great mental excitement, after which she relapsed, and died under symptoms resembling those of phlebitis. In his Operative Medicine, Velpeau, after stating that he had himself only operated in two cases, in one of which death occurred in three days, and in the other six weeks after the excision of the cervix, proceeds to remark :—"A patient operated upon by M. Blandin died of uterine phlebitis; one of those that Lisfranc lost was carried off by peritonitis; others have sunk under a nervous state, the gravity of which it is not easy to explain. Up to the present time," he continues, "scarcely any one has been seen to die directly of hæmorrhage. Rust and Graefe, of Berlin, Roux and Dupuytren, who have all seen their patients perish from the immediate results of the operation, do not ascribe the fatal result to this complication (hæmorrhage). Excision of the neck of the uterus, although easy and by no means severe, is nevertheless sometimes extremely dangerous and speedily fatal. However, Osiander has practised it twenty-eight times, Dupuytren fifteen to twenty times, and Lisfranc forty to fifty times, without it having caused death more than once out of every six or seven operated upon."

*Cases adapted for the Operation.*—Since the excision of the cervix uteri is an operation attended with so many chances of danger, as Velpeau exposes in the passage which I have quoted, it evidently follows that it should only be adopted in cases, and under circumstances, in which milder and safer means of cure are insufficient. The forms of disease in which, upon this principle, it seems justifiable to avail ourselves of the aid of this operation (supposing no contra-indication to be present), are, in my opinion, principally :

1st. Great morbid hypertrophy, by elongation, of the vaginal portion of the cervix uteri. I have operated successfully in two such cases. 2nd. Corroding ulcer, when limited to the lips of the cervix, and pathologically identical with the form of lupus or malignant ulcer so well known in the face; and 3rd. Circumscribed and local forms of carcinomatous disease or excrescence, of the lips and lower segment of the cervix uteri.

Supposing that we discover, by a proper physical diagnosis, that true carcinoma of the uterus is present, is the case consequently to be looked upon as always utterly hopeless? I believe that in forty-nine instances out of every fifty in which we find the uterus or any part of it, the seat of true carcinomatous deposit, the disease inevitably leads, sooner or later, to a fatal termination. The rapidity of its march is various, and may deceive an incautious observer by its duration. I have known death occur a few weeks after the disease first attracted the special attention of the patient; and I have had occasion to watch the course of a case, where the patient dragged on a miserable existence for seven years after the discovery of the malady

by the late Dr. Hamilton. But while thus fatal in almost every instance, there are still, as we have already seen, some rare varieties or forms of carcinoma uteri, that are apparently within the just range of surgical treatment. And one condition favouring this is the generally admitted fact, that the disease almost always begins in, and, for a time, is limited to the structure of the lips and cervix of the uterus. Professor Rokitansky, of Vienna, perhaps the most profound and experienced morbid anatomist of the present day, in speaking of the first locality and origin of cancer of the uterus, observes: "Carcinomatous induration generally limits itself to the vaginal portion and cervix, and very often in a defined and sharp manner." In another paragraph he remarks: "The primitive seat of cancer is always the cervix uteri, and first of all and particularly the vaginal portion. The primary appearance of cancer in the fundus uteri is limited to so extremely rare cases, that what we have just said remains one of the most fixed rules. "It forms," he adds, "in this respect, a contrast with fibrous and tuberculous tumors of the uterus, a contrast which also holds with regard to its involving the parts around, and its ulcerative destruction.

In relation to the same question, we must bear in recollection another circumstance in the natural history of carcinoma uteri, granted by most of the best pathologists who have written upon this disease. "Uterine cancer," observes Professor Walshe, one of the latest and most learned writers on the subject, "is commonly primary and possessed of comparatively slight tendency to contaminate the system generally." And again: "There can be no question that the womb ranks among those organs less prone than certain others, as, for instance, the mammæ and testes; to contaminate distant viscera. Among thirty-seven females, cut off by uterine cancer, and examined by M. Ferrus, seven only exhibited secondary formations elsewhere.

In these two important respects, therefore, uterine carcinoma presents conditions favourable for surgical interference. Still, however, in order that a case may offer any chance of operative success, several conditions seem requisite: 1st. The disease must be in an early stage. 2nd. The morbid structure must be strictly limited to the lip or lips of the cervix, or at all events be distinctly situated below the line of reflection of the vagina upon the cervix uteri.

In actual practice, however, it rarely indeed happens that the above combination of circumstances is met with, because, in truth, the medical attendant is very seldom called in till the disease is so far advanced as to have passed the limits in question. In fact, cancer uteri generally proceeds throughout its first stage of deposition and induration with such slow and stealthy steps, that the attention of the patient is not awakened to its presence by any particular local symptoms; and it is commonly not till the malady is advancing or has advanced towards its higher states of morbid development and disintegration, that a sudden and unaccountable loss of blood, or the unexpected appearance of some purulent or sanious discharge, or the supervention of uterine pain, first rouses the lurking suspicions of the sufferer to the nature of the fearful fate that is impending over her.

3rd. Future inquiry will in all probability prove that there are some varieties, types, or species of carcinoma of the cervix uteri which are much more within the pale of surgical treatment than others. I believe this last to be a most important subject of inquiry; but it is confessedly a department of uterine pathology to which (valuable as its results may be) no labourer has as yet directed his attention.

*Dublin Quarterly Jour. of Med. Science, Nov.*, 1846, *p.* 352.

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181.—PASSIVE CONGESTION OF THE UTERUS.—By James Milman Coley, M. D., Physician to the Western Dispensary, &c.

**When a state of anæmia occurs during pregnancy, the veins and lympha-**

tics of the uterus are liable after abortion or labours to remain in a state of atony, which renders them in some instances incapable of recovering their original diameter, unless sufficient rest is allowed in the horizontal position. Hence, those puerperal women who are compelled or induced to resume the upright position prematurely, while labouring under this state of cachexy, are apt to experience severe and lasting misery, from pain in the back, and a sensation resembling that produced by prolapsus uteri, whenever they attempt to walk or remain long in the erect posture.

On examination we discover a soft, doughy, indolent compressible tumor, occupying some part of the uterus towards its cervix. Pressure with the finger leaves an impression resembling that from œdema in the extremities, and little or no uneasiness is perceptible by the patient from the pressure. The shape of the tumor is oval, its long axis corresponding with that of the uterus, and its size varies. It may be distinguished from carcinoma by the absence of pain, tenderness, and induration, and by the healthy condition of the cervix and os uteri; and from the fibrous tumor of the uterus, by its characteristic softness. On examining the morbid part with the speculum, it appears injected with venous blood, which appearance I believe proceeds from the retardation to the return of blood in the venous capillaries, and the consequent distension of the mucous membrane. Unless removed by proper remedies the disease may continue many years.

*Treatment.*—As long as the process of sanguification is interrupted, and the elements of the blood disturbed, the vessels circulating that fluid will be found to partake of the general enervation: the contractile power of the vessels, as well as other vital functions, being found defective. Hence, a constitutional remedy will be necessary, as well as the collateral assistance to be derived from a favourable position of the body; for it must be observed that the preternatural distension of the veins and absorbents, and the consequent infiltration of serum into the cellular membrane, are the result of a passive congestion, having but little disposition to terminate in inflammation. The essential treatment, therefore, consists in the exhibition of iodide of iron, which operates by removing the deficiency of fibrine and hematosine in the blood, and promoting the absorption of the lymph effused into the cellular membrane, the natural consequence of venous and lymphatic obstruction. Some practitioners recommend uninterrupted decumbiture, with or without scarification of the cervix uteri. I have seen the horizontal position continually employed during many months without observing any improvement in the tumor; and I believe it will be found that no patient in a state of anæmia can bear such constant confinement without increasing the constitutional disorder. Having never found it necessary in the treatment of this disease to have recourse to scarifications, I cannot speak of their effect, although it appears to me they may be calculated to afford temporary relief, should the disease be found to extend to the cervix uteri. *Med. Gaz., Sept.* 18, 1846, *p.* 492.

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182.—NATURE OF THE MEMBRANE OCCASIONALLY EXPELLED IN DYSMENORRHŒA.—By J. Y. Simpson, M. D., &c.

It is now generally known, that in some cases of dysmenorrhœa, an organised membrane is expelled, during the period of the catamenial discharge; and that this happens either occasionally only, or what is far more common, during a long succession of menstrual periods. "All authors who have expressed an opinion regarding the nature of this membrane have, as far as I am aware," observes Dr. Simpson, "regarded it as a morbid structure, formed by the exudation of coagulable lymph or fibrine upon the free surface of the mucous membrane of the uterus."

In the number of cases examined by Dr. S. from time to time, the form and structure of these dysmenorrhœal membranes led him to believe that

they were not new or false membranes formed of coagulable lymph, and secreted by the mucous surface of the uterus, but that they in reality consisted of the mucous membrane of the uterus itself, hypertrophied and separated. "All my later observations have gone to confirm me in the same opinion, viz., that the productions in question are not the results, as is generally supposed, of fibrinous or plastic exudations upon the free surface of the mucous membrane, but that they consist of actual exfoliations of the membrane itself."]

The proof of this opinion rests upon different grounds:—*First*, The dysmenorrhœal membrane presents anatomical peculiarities that are never seen in any simple fibrinous or inflammatory exudation; and these anatomical peculiarities, on the other hand, specially pertain to, and are characteristic of, the structure of some mucous tissues, such as that of the uterus. One special illustration may suffice. Professor Reid, Krauss, and others, have shown, that the surface of the mucous membrane of the uterus is marked by numerous orifices of small tubular glands, crypts, or follicles, opening upon it (the uterine glands of some modern authors). This structure I have distinctly traced in different specimens of dysmenorrhœal membrane from different individuals.

*Secondly*, The general configuration and character of the surfaces of the dysmenorrhœal membrane are such as would result from the origin which I have attributed to it, namely, the exfoliation or detachment of the mucous membrane of the uterus. In those instances in which the membrane is thrown off in one piece, and without disintegration, it presents exactly the flattened triangular appearance of the uterine cavity. Its sides may be so compressed that the expelled mass at first appears solid; but a little careful dissection or maceration will readily show that it consists of two layers, and that there are the remains of a cavity between them. The interior of the cavity is smooth, and marked by the orifices of the uterine mucous crypts that I have above alluded to. Occasionally we can easily trace three large openings at its three angles, corresponding to the openings of the two Fallopian tubes and cervix uteri. But the external surface of the mass is rough and shaggy, marking the effects of dilaceration from the tissue of the uterus. Sometimes we see a piece discharged quite smooth on one surface, and rough on the other. When this is the case, we may be perfectly certain that it is a portion only of the membrane which has been expelled, or, at least, preserved for inspection. For if the portion of mucous membrane lining the anterior wall of the uterus alone, or lining its posterior wall alone, be discharged and examined (and not that of the whole cavity), it will necessarily display the apparent anomaly alluded to.]

If the membrane is thrown off in broken or disintegrated fragments, as sometimes happens, it will be more difficult to trace the structural characteristics that I have mentioned. Another form of difficulty is occasionally produced by blood being infiltrated into or upon the dysmenorrhœal membrane. In some instances the membrane is found encased in one or more layers of coagulated blood; and if that blood has already become decolorized, and assumed a fibrinous appearance, mistakes might easily occur, provided the inquirer were not aware of this source of fallacy.

*Thirdly*, The dysmenorrhœal membrane exactly resembles the decidual membrane (the decidua vera); and all our highest authorities in anatomy are, I believe, now willing to grant that, as pointed out by the researches of Sharpey, Weber, Goodsir, and others, the decidua vera is not a new membrane, formed in the uterus after conception, but merely the normal mucous membrane of the uterus hypertrophied, with its mucous crypts or follicles increased in size, and the cells of its interstitial tissue greatly developed and multiplied. In the dysmenorrhœal membrane the mucous follicles or crypts are perhaps not enlarged and developed to the same proportionate degree as they are in the decidual membrane. In other respects the two membranes are identical. They have the same triangular form.

There is the same appearance in both of openings at their three angles, and in both these openings are occasionally more or less perfectly sealed up when the tissue of the membrane, in their immediate neighbourhood, is developed in an unusual degree. The external surface of each membrane has the same shaggy, ragged form. In each we have the same cribriform appearance upon their smooth internal surface, marking the orifices of the mucous follicles. When examined under the microscope, the interstitial or inter-follicular tissue of both membranes, shows a similar structure, namely, one wholly composed of an agglomeration or superposition of simple nucleated cells. And altogether, if, on the one hand, it be allowed that the structure of the decidua proves it to be the mucous membrane of the uterus in a state of high development and hypertrophy, then, on the other hand, the structure of the dysmenorrhœal membrane is so similar to that of the decidua, as to prove a perfect identity with the decidua in its characters, and consequently, also in its origin.

In some respects the evidence which we have in favour of the decidual membrane being merely a hypertrophied state of the mucous membrane of the uterus, it is still wanting, in so far as regards the dysmenorrhœal membrane. For, first, in cases of patients dying at different periods of early pregnancy, a regular progression of observations has now been made, showing the gradual transformation of the true mucous into the true decidual membrane; and, secondly, in patients dying after delivery, and, consequently, after the separation of the decidual or lining membrane of the uterus, the actual absence of the mucous surface of the uterus has been often ascertained on dissection. I lately saw a case where the patient died six weeks after delivery, and still, at that late date after confinement, the mucous lining of the uterus was not yet regenerated. No corresponding series of observations has hitherto been made upon the actual formation of the dysmenorrhœal membrane before menstruation, or upon its actual absence after that period. But a more careful investigation of the state of the uterus after death, in patients who have happened to be suffering under membranous dysmenorrhœa during life, will, I have no doubt, afford the requisite data. It may not be uninteresting to add, that the absence of the mucous lining of the uterus in persons who have died after delivery, or who have been previously subject to membranous dysmenorrhœa, may have given rise to the strong opinions expressed in former times by several anatomists, and particularly by Morgagni, Chaussier, and Gordon, in regard to the human uterus not being normally provided with a mucous membrane. Not meeting with that membrane under some circumstances and in some cases, they were induced to doubt its presence under any circumstances or in any cases.

Modern physiology has made us sufficiently acquainted with the curious fact, that a portion of the epithelial layer of the mucous surface of various organs, exfoliates constantly and normally during the performance of the special functions of these organs. For instance, this holds true with regard to the epithelium of the stomach during digestion, and that of the uterus during menstruation. But there are few circumstances, either in healthy or morbid anatomy, so strange as that which I have attempted to prove in the preceding remarks, namely, that the proper mucous tissue of the uterus itself may, within the compass of a menstrual period, form, enlarge, separate, and again be reproduced; and further, that all this may occur and continue regularly for a succession of months, or, as sometimes happens, for a succession of years.

I have no intention, however, at present of dwelling either upon the various pathological or practical views to which the opinion that I have above propounded regarding the origin and nature of the dysmenorrhœal membrane, very evidently points. It is enough perhaps to remark, that the observations which I have made go to demonstrate that the dysmenorrhœal membrane is not formed, as is generally believed, by a simple in-

flammatory effusion of plastic or coagulable lymph, and hence it is not to be successfully prevented and combated by simple anti-inflammatory treatment. The action giving rise to it may in some cases be combined or complicated with inflammation. I have seen, for example, the membranous dysmenorrhœa in several instances co-existing with inflammatory induration and ulceration of the cervix uteri. But essentially, the normal action of the uterus or ovaries giving rise to the formation of the dysmenorrhœal membrane is not a state identical with inflammation, but a state identical with the condition of these organs after impregnation and during the earlier weeks of pregnancy. It is so far a state and product natural to one special condition of the uterus, but here occurring at an unnatural time, under unnatural circumstances, and with unnatural frequency.

*Monthly Jour. of Med. Science, Sept.*, 1846, *p.* 161.

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183.—OBSERVATIONS ON UTERINE POLYPI AND ULCERATION, WITH CASES.—By W. F. Montgomery, A M., M. D., &c.

[Dr. Montgomery has treated more than thirty cases of uterine polypi under his care, on which he has operated by different methods, the history of most of which he brought before the notice of the Dublin Obstetrical Society lately. The first of these cases was one of cauliflower excrescence of large size, which was removed by ligature; it returned again after some months, the patient having good health in the meantime. In speaking of uterine polypi, Dr. M. observes that:]

Polypus, even when of very small size, is frequently accompanied by ulceration of the labia of the os uteri; this combination will be noticed in several of the cases to be hereafter detailed. These ulcerations are, I believe, in general produced by the polypus, or owe their existence to its formation, rather than to the operation for its removal, which, however, may occasionally produce such an effect; they will sometimes heal without treatment on the removal of the polypus, but, as frequently, they will not: it should, therefore, be a rule to examine such cases with the speculum before we pronounce them quite well, lest we should only cure the patient of one-half of her disease, and leave her to the consequences of the other. Dr. J. Henry Bennet has called attention to this fact, and brought forward some illustrative cases in a paper which appeared in the Lancet last year.

[In the second case there was a small polypus, accompanied with symptoms of prolapsus uteri and ulceration of the os uteri. The polypus was removed by excision, and attended with considerable hæmorrhage. The case did well. The polypus was as large as a Windsor bean, and very high up: a speculum being introduced, Dr. M. snipped the pedicle across, and applied nitrate of silver to restrain the bleeding. He was afterwards obliged to use styptic lotions and plug the vagina. He in future resolves to "twist off these small polypi instead of cutting them." Hæmorrhage, after cutting through the pedicle of a polypus not thicker than a quill, has been known to occur to such an extent as to endanger life. Dr. M. observes:]

The next case to which I shall refer, was one which strongly attracted my attention to the influence which even the very smallest polypi, at the os uteri, may have in giving rise to and keeping up, profuse menorrhagia, accompanied by ulceration.

Case 3.—Very small polypi at the os uteri, producing profuse menorrhagia and ulceration; removed by torsion; cure.

The patient in this case was a young woman, aged twenty-five. She had been married more than a year; had no child; was affected with almost constant menorrhagia, without any pain, under which she had become completely exsanguined; her whole surface was of a corpse-like white, and par-

tially œdematous; she was greatly enfeebled; her appetite very bad, and her stomach irritable; altogether she was in a most miserable, broken-down state. To the touch, the os and the cervix uteri felt natural, both as to size, figure, and consistence; but the margin of the os had an indistinct velvety feel, which led me to suspect a slight ulceration, and to use the speculum, which disclosed two very small polypi, not larger than grape stones, and attached by pedicles immediately within the os uteri, the margin of which was slightly ulcerated. I caught these growths with a forceps, and twisted them off, and with a pencil of lunar caustic, cauterized the spot from which they grew, and the ulcerated surface also, which, after a few similar applications, healed.

[This patient took chalybeates, with gentian, and within two months was quite well. She had taken a great deal of medicine; this local cause, producing so much debility, having been overlooked.]

Case 4.—A very small polypus at the os uteri, causing profuse menorrhagia, with ulceration; removal; cure.

I was requested to see this patient on the 4th of October, 1845; she was about fifty years of age, and fourteen years a widow; she was affected with profuse menorrhagia, and slight semi-purulent discharge; she was blanched, and had pains in the back and loins. By the touch, no appreciable alteration in the os or cervix uteri, as to size, figure, or consistence, could be detected; but the margins of the os felt velvety. On applying the speculum, a superficial ulceration was seen, surrounding the os uteri, to a breadth of about one-eighth of an inch all round, and on applying a brush to wipe away the muco-pus from between the labia of the os, a small polypus, about the size of a pea, appeared, attached by a pedicle. Not having a proper forceps at the moment, I merely touched the part over with lunar caustic, intending to twist off the polypus at my next visit.

October 9th. On bringing the parts into view, I found that the body of the polypus was gone, and only its pedicle remained, which I believe to have happened in the management of the speculum, which I found considerable difficulty in adjusting, so as fully to expose the os; the remains of the pedicle I twisted off, and cauterized the ulcerated surface with nitrate of silver; cicatrization soon followed, and the menorrhagia ceased. The words of Gooch might be, with propriety, applied to this and the preceding case—"That the hæmorrhage depended on the polypus, however small, was proved by the event, for they ceased on its removal."

[In his 5th case there was an encysted ovarian tumor, and tumors in the labia pudendi, as well as two small polypi at the os uteri—co-existent with which there was considerable ulceration. These polypi were removed by torsion, the surface afterwards was rubbed over with nitrate of silver, and the patient quite cured. In his 7th case there was a very small polypus, accompanied with extensive ulceration and thickening of the cervix uteri. The polypus was not discoverable by the finger; but on applying the speculum, it could be seen of a bright crimson or raspberry colour, the size of a pea. It was destroyed by caustic, and the ulceration treated in the ordinary way: she got quite well. Dr. M. remarks:]

Why, it may be asked, do these small polypi, accompanied by ulceration, thus elude detection by the finger? First, on account of their small size; secondly, because of their softness and extreme mobility; and thirdly, because, under the peculiar circumstances, the labia of the os uteri are congested and enlarged; and, projecting more than natural, enclose between them, and as it were, protect these small polypoid excrescences, so as they cannot be felt by the finger; and, I should add, that if an examination be made by the plain tube speculum, they may still escape observation, especially if the cervix uteri be retroverted; for, in order to bring them fairly into view, it is often necessary to cause separation of the lips of the os, which the plain tube speculum will not do, but which is readily accomplished by the expanding speculum of Ricord.

These growths, which I have here called raspberry polypi, are found, possessing very similar characters (except as regards sensibility), in other situations; having in common their development in the entrances to cavities lined by mucous membrane, and surrounded by sphincters. Thus, they are found within the anus, at the entrance of the vagina, in the meatus urinarius; and also in the external meatus of the ear; and wherever existing, they are almost always accompanied by more or less of superficial ulceration of the mucous membrane of the part. Their structure appears to be the same in all these situations; but while those that form at the os uteri are quite insensible, in other situations their sensibility is generally very marked, and sometimes intense; but not always, for I have met with instances in which those vascular tumors have been completely devoid of sensibility, even growing from the meatus urinarius, in which situation they are, in general, most exquisitely painful.

These small polypi and polypoid excrescences of the os uteri are of more importance than their size would at all lead us to anticipate: at whatever period of life they may be found, or however small they may be, they are accompanied by increased vascular action in the cervix uteri, producing often ulceration, and, of course, debilitating discharges, and a train of symptoms, which, although perhaps so slight in their character, individually, as almost to escape observation, yet have the effect of seriously deranging many of the most important functions of the economy, and of inducing a very miserable state of health; thus, in case 3, two little polypi, not larger than grape-stones, and accompanied by slight ulceration, had nearly brought the patient to the verge of the grave; and their removal was quickly followed by restoration to perfect health.

These polypi are seldom solitary: where you find one, there is very often another, either discoverable at the moment, or soon to appear; they, like other forms of polypus, are frequently conjoined with other diseases, especially with fibrous tumor. I have in my museum several specimens of these combinations: in one instance, there are two of these small growths in the cervix, and two bony tumors in the uterus; in another, there is a small polypus growing from within the os uteri, a larger one within the cavity of the organ, and a fibrous tumor in its substance.

In case 5 there appeared first a polypoid excrescence, and then a little true polypus, and these, in conjunction with encysted tumors of the ovary, and also in both labia externa. When they occur in women of advanced years, say from sixty to seventy, they are often the precursors of something worse, especially when of the vesicular kind. You may readily remove them, of course, but too often you will be disappointed in the result; the discharges return; you examine—there is no reappearance of the polypi: but the discharges go on, after a time pain sets in, and ultimately the patient dies, after a long series of sufferings; and if the uterus is examined, it is found enlarged, but not much, with its internal surface eroded with ulcerations, and covered with fungoid excrescences. We should, therefore, be cautious in promising too much, when called on to treat these small growths, for, although in most cases our success is complete, we are liable to disappointments.

I have now to notice another source of error, of an opposite kind to that just discussed, which I have frequently met with in practice; I mean, a tumefied and somewhat elongated condition of the extremity and inner surface of the anterior lip of the os uteri, produced by the increased vascular action accompanying a long-standing ulceration of this part, which gives it so much the character of a distinct tumor proceeding from the os, as sometimes to lead to its being mistaken for a polypus. The peculiar form of the os uteri, in these cases, tends rather to confirm this error, its lateral commissures being drawn upwards and forwards, while the tumefied anterior lip stretches downwards and backwards, producing considerable apparent retroversion of the cervix.

The orifice assumes nearly the form of a crescent, and seems to encircle the tumor, which, however, it does not, but the posterior lip feels thinned, and partially drawn over the anterior, somewhat like a hood. The diagnosis is really not difficult, once attention is called to the matter, and we readily ascertain, by obvious points of distinction, that the tumor thus felt is the anterior lip itself in an altered condition, and not a polypus attached to it, or lying within the circle of the os. For the present I will only add that this tumefaction yields, but very slowly, to scarifications and cauterization conjoined to constitutional treatment; and a portion of its surface will remain prominent and unhealed long after the rest of the ulceration has cicatrized. In proportion, however, as this hypertrophy of the anterior lip diminishes and fines down, the apparent retroversion of the cervix gradually lessens, and at length disappears.

The following case affords a good illustration of this form of disease, which also existed in cases 5, 6, and 7, though not to an equal degree.

Case 8.—Extensive ulceration of the cervix-uteri with prominent hypertrophy of the anterior lip of the os, mistaken for a polypus; cured by scarification and cauterization, &c.

A lady applied to me for advice, in consequence of having been told that she had a tumor protruding through the mouth of the womb, which would require removal by a ligature. She complained of much pain in different directions through the pelvis, loins, and down the thighs, with bearing down, and what she called "a bursting feel," together with purulent discharge; her general health, strength, and spirits, were very much impaired. On examination with the finger, I discovered the tumor alluded to, but it was evidently not a polypus, but a portion of the anterior lip of the os uteri, projecting in the way just described, and covered with granulations, so much developed, that I could distinguish them quite plainly by the touch.

When the speculum was used, this became still more evident, and the enlarged anterior lip presented, in colour and granular surface, an appearancet exactly resembling that of the raspberry polypi already mentioned; but his portion of the cervix was so much enlarged and retroverted, that a full view of the os uteri could not be obtained until after the lapse of more thlan a month; by which time, a great reduction in size was effected in the hypertrophied part by repeated scarifications, cauterization with the acid nitrate of mercury, together with rest, aperients, the internal administration of hydriodate of potash, and the use of the warm hath. At the end of three months I had the satisfaction of finding the tumor removed, and the ulceration healed. In such cases as these then, (and they are common enough), a growth of this kind may be mistaken for a polypus, when no such thing exists; while, on the other hand, we have just seen that where small polypi really do exist, they may be readily overlooked, except great care be exercised in making our examination.

[The history of several other cases shows us that in removing these tumors by ligature, we should not take it for granted that when the canula comes away the polypus is detached. The latter, indeed, may take place, and the canula remain adherent. On the other hand, the instrument often comes away, leaving the polypus, although detached. When this occurs, the polypus is generally large, and cannot escape from the vagina; it ought, as soon as possible, to be extracted by the finger. This is a practical point worth observing. In cases 11 and 12, the polypus was taken for carcinoma; it is probable this was owing to the examination being made just at the time when the tumor was descending through the cervix, causing it to assume an unnatural form and consistence. In one of Dr. Montgomery's cases, the tumor, when he first made an examination, was fibrous, and attached to the posterior wall of the uterus. It gradually descended, and assumed a pedunculated character, and was removed by ligature. Dr. M. adds:]

The instrument which I have always used for applying the ligature is the

double moveable canula of Niessens, and I have never yet met with a case which was not manageable by its means. The ligature which I prefer to all others, and always use, is silk salmon fishing-line, prepared by soaking it in linseed oil, in which state it combines the necessary qualities of great strength, perfect pliability and softness, and remaining unaffected by moisture. The forceps alluded to in case 5, which I find very useful for twisting off small polypi, consists of a straight stem, about eight inches long, set in a handle; at the extremity of the stem are two short spring blades, with serrated tips, upon which slides a brace moveable from the handle, by which they are easily pressed firmly together, and made to grasp very securely any object caught between them.

Of the thirty cases operated upon, only one terminated fatally, which, considering the wretched condition in which many of the patients were at the time of the operation, and some of them for months or years before it, is an encouraging and satisfactory result; but it should not be forgotten that the cure of polypus of long standing, and accompanied with large discharges, is, under certain circumstances, associated with a risk which claims careful consideration. Experience has taught me, that if a woman has for many years laboured under polypus, with constant and large discharges, and if she be naturally of a full habit and inclined to good living, and especially if she be of such an age that, after the removal of the disease, menstruation is not likely to recur, there will be danger of determination to the head, as in other cases of suddenly suppressed discharges: It will, therefore, be the duty of the medical attendant, to prescribe such a carefully-regulated system of diet and medicine as he will deem best suited to prevent the occurrence of plethora and cerebral congestion, which I have seen take place fatally, under such a combination of circumstances.

From the foregoing cases and remarks it may be collected—that very small uterine polypi, or polypoid excrescences are of frequent occurrence. That they are often not discoverable by touch alone, and so escape notice. —See cases 3, 4, 5, 6, 7. That they may even elude detection with the speculum, especially if the instrument used is not capable of separating the lips of the os uteri. That they are a common cause of ulceration and menorrhagia, one or both; the cure of which requires, as a preliminary step, the removal of the polypus.—See cases 3, 4. That while thus on the one hand, a small polypus may escape detection, there is, on the other hand, a peculiar condition of the anterior lip of the os uteri liable to be mistaken for a polypus, and requiring a long time for its removal.—See cases 5, 6, 8. That the very small polypus of the os uteri is seldom solitary, and in common with polypi of other kinds, is very often combined with diseases of the os uterus, especially with fibrous tumor. That these small polypi of the os uteri, when occurring in women of advanced age, especially if they are of the vesicular kind, are often the precursors of a malignant form of uterine disease. That polypus being very frequently accompanied by ulceration of the os and cervix uteri, and its concomitant pain and structural alteration, the symptoms are occasionally mistaken for those of cancer; which error is most likely to be committed if an examination should happen to be made just when a polypus of rather large size is passing through, but still engaged in, and distending the os uteri.—See cases 9, 10, 11, 12.

That in cases of larger sized polypi, ligature is the means most generally eligible, as being safer than excision, though not so expeditious; its application having, in general, the immediate effect of restraining the morbid discharges, and alleviating other symptoms (as in cases 11, 13, 14), and ultimately curing the disease. That polypi and polypoid excrescences of small size are best removed by torsion; or in some instances their destruction may be conveniently effected by caustic.—See cases 3, 5, 6, 7. That with large polypi torsion is unsafe, and should not be attempted.—See case 20. That even with a polypus of small bulk and slender pedicle, excision is not free from the risk of troublesome hæmorrhage (see case 2), while with

those of large size there is great reason to apprehend such an occurrence, taking place to a very dangerous degree, even though the precaution may have been taken of firmly constricting the pedicle with a ligature previous to its division.—See case 17, and remarks on case 16.

That in ordinary cases of benign polypus, when no other disease exists in the uterus, the removal of the tumor by ligature or other suitable means, is, in the vast majority of cases, completely successful, even under circumstances apparently quite hopeless.—See cases 11, 13, 14, 18. That in malignant growths, such as cauliflower excrescence, removal by ligature will sometimes effect a complete cure; and that, where the success is not so decided, much good may be done by the operation.—See case 1. That the situation from which a polypus springs makes a considerable difference in the symptoms which it produces; a polypus of the lip of the os uteri giving rise to fewer symptoms and much less discharge, as in cases 2 and 14, than one of very inferior size growing from any part within the os uteri.—See cases 3, 4, 5, 6, 7.

That a polypus of only a moderate size growing from the lip of the os uteri is not likely to interfere, injuriously, with gestation or delivery, and its removal may be effected by, or as a consequence of, the pressure which it sustains during the expulsion of the child.—See case 15, and remarks thereon. That if a polypus, already detached, be too large to pass readily out of the vagina, it ought not to be allowed to remain there, but should be removed with the least possible delay, as its putrefaction may be attended with very unpleasant consequences.—See cases 11, and 12, and remarks thereon. That a fibrous tumor, originally formed in the substance of the uterus, may thence descend, pass through the os uteri, and form an ordinary pediculated polypus in the vagina.—See cases 12 and 13, and observations thereon.

That in the unimpregnated state of the uterus, this change will be effected gradually, and in general very slowly, as in cases 12 and 13: but that, should pregnancy occur, the descent and expulsion of the tumor may take place quickly under the expulsive action of labour, as in case 19, and probably in case 18 also. That a polypus, even of large size, may thus make its appearance for the first time, immediately after delivery, no suspicion having been previously entertained of its existence. That the cure of long-standing polypus, with large discharges, is liable to be followed by a condition of the system requiring precautions against determination to the head. *Dublin Quarterly Jour. of Med. Science, Aug.* 8. 1846, *p.* 31.

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184.—OBSERVATIONS ON DISEASE OF THE VAGINA AND URETHRA.—By Dr. Mitchell, Dublin.

[In all cases where there is reason to suspect disease of the neck of the uterus, it is a good precautionary measure to employ the speculum where not really contra-indicated.]

The treatment that I have found most useful for the vulvular inflammation has been the frequent use of the hip bath and poppy-head stupes, until the more urgent symptoms of inflammation have subsided. The irritation and itching has been best allayed by the application, three or four times a day, of a solution of nitrate of silver in the proportion of a drachm to the ounce of distilled water. In some cases I have found benefit by alternating the caustic solution with tincture of matico, applied in the same way—viz., by tying a small piece of sponge on the end of a stick, or with a camel's hair pencil.

We shall also derive benefit from the internal exhibition of mild saline purgatives, rest, and sea-bathing; it will frequently, however occur, that after almost all our remedies have failed, and the disease has been of considerable standing, that the administration of alterative doses of mer-

cury will effect a cure, although not the slightest trace of syphilis be present. The preparation I have used most frequently has been the Plummer's pill, five grains night and morning. I have also seen much good effected by giving twenty drop doses of Brandishe's alkaline solution in an ounce of any bitter infusion, such as gentian or quassia, two or three times a day. When the pain in the back is troublesome, being frequently more of a dull aching feel than acute pain, the application of the cautery to the sacrum affords very great, and in many cases instantaneous relief. To this method of treatment I have before called the attention of the profession for uterine leucorrhœa in a paper read before the Surgical Society, and have since used it most extensively, not only in the above named affection, but also for the one under consideration, and with very great success.

The method of using it is now quite familiar, so that I need not dwell longer on the subject. Besides the plan of treatment alluded to as having been adopted in this affection, I may mention that the various soluble salts of lead, zinc, and mercury, narcotic preparations, borax, hydrocyanic acid, &c., have been used. With some practitioners the exhibition of balsam copaibæ, and the application of bread crumb soaked with liquor plumbi diacet, has proved useful, and in some cases effected a cure. Gelatine and bran baths have been also much extolled. On looking over the registry I find a vast number of cases of this affection complicated with different vaginal and uterine diseases. *Dublin Med. Press, Oct.* 7, 1846, *p.* 225.

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185.—FOLLICULAR DISEASE OF THE VULVA.—By Henry Oldham, Esq.

[Mr. Oldham has met with several cases of a form of disease attacking the follicles which are freely scattered over the mucous membrane of the vulva. It is a painful affection, very difficult of cure, and is attended with leucorrhœal discharge. Mr. Oldham observes:]

There is a form of follicular inflammation which, generally speaking, is not lasting, which causes some smarting and itching about the vulva, and in which the follicles or the inner surface of the nymphæ and about the vestibule are raised into little seed-like spots. I have noticed it in some cases as preceding or immediately following the menstrual period, and sometimes as directly connected with disease of the cervix, or some remoter part of the sexual organs.

But the disease I am now describing is very generally limited to two symmetrical strips of mucous membrane, at the posterior half of the entrance to the vagina within the nymphæ, and a detatched portion just beneath the urethra. There has been quite sufficient uniformity in its situation at these parts to warrant me in fixing on them as, at least, the most common seat of the affection. If an examination is made at an early period of the disease, a number of small, circular, highly injected points are seen, and the mucous membrane looks much inflamed. At first these points are solitary, and slightly raised on the surface, and a minute speck of ulceration is frequently seen in their centre. These, I believe correspond to the follicular crypts of the mucous membrane, and the ulcerated portion to their central pore. After a time the points lose the appearance of being isolated; they coalesce, and a band of vividly injected membrane is formed.

The sphincter vagina is always contracted, and the mucous membrane is much punctured, and in several cases I have seen the disease extend to the lowest folds of the vagina; the tops of which become very red, and bleed on being touched or separated. I have only seen one case in which the whole tract of the mucous membrane of the vagina was similarly affected. When the disease has been of long standing, a change may be observed in the colour of the mucous membrane of the vulva, and the lowest part of the vagina. It assumes a white appearance, as though some white paint had been diffused over the surface. This occurs particularly in women who

have ceased to menstruate, and is not confined to the present disease, as I have seen it well-marked in protracted cases of prurigo of the vulva. The disease in question is most intractable; it has all the inveteracy of some of the more chronic skin diseases, and it will torment a person for years, sometimes getting better, and again returning as bad as before.

It is difficult to assign the causes which produce this disease. It certainly is not connected with syphilis, nor has there been any habitual want of cleanliness to account for it. It followed marriage only in one case, and I have not seen it associated with intestinal worms. From the first I suspected that some other part of the sexual organs might be primarily affected, and one case is interesting as showing a diseased state of the ovaries. In general, however, the uterus seemed perfectly healthy, performing its functions well, and being quite free from pain when moved. I am disposed to think it a primary disease of the follicles of a part of the genital mucous membrane, just as distinct as acne or any other disease may be of the skin, and not as secondary to a more concealed and distant disorder.

The earliest symptoms of this follicular disease are leucorrhœa, with more or less irritation of the external genitals. These are particularly noticed after walking or standing. The leucorrhœal discharge then greatly increases, and from being thin and whitish it becomes yellow and thicker. It never assumes the viscid, gluey character which marks the affections of the cervix of the womb, but it soils the linen with a yellowish tinge, sometimes having a darker color from being mixed with a small quantity of blood, and occasionally smelling badly. That part of the mucous membrane which is affected becomes the seat of a most painful and almost incessant smarting, with every now and then a severe attack of pruritus. This itching, however, is not a uniform symptom, as some of the worst cases are unattended by it, and the sore and sensitive state of the vulva forbids any attempt at rubbing it. The patient sits down with pain, and adjusts her seat with care, first resting on one ischium, and then gradually sinking down on the chair. Sexual intercourse is painful from the first, but when the disease is established it is altogther abandoned, from the intense suffering it causes. Pain in passing water is a very rare symptom. Sometimes the little patch of inflamed membrane beneath the urethra may be touched by the urine as it flows, which occasions much pain at the time, but generally it escapes the stream of urine. The local symptoms are aggravated just before a menstrual period, and particularly by any mental depression or unusual fatigue, in warm and wet weather, and by a constipated state of the bowels. In this as in most of the affections of the external organs of the female, much unhappiness is apt to spring up between husband and wife, which imbitters the life of the woman, and greatly augments her sufferings. To the foregoing symptoms are now added habitual lumbar and sacral pains, heavy pains in the thighs and inguinal canals, with sometimes forcing pains when walking. The general health becomes impaired; the patient is timid, foreboding, and fretful; the digestive organs suffer; the appetite fails; the tongue is pale, flabby, and tremulous, and she is constantly nervous, hysterical, and weak. When the parts are separated in making an examination there is always much pain, the inflamed follicles, when even gently put on the stretch, sometimes bleeding a little. The orifice of the vagina is always closely contracted, and so shuts up the canal that the leucorrhœal discharge accumulates within it, and when it does escape flows profusely. The vagina and uterus are neither tender nor hot, and when once the finger passes the closed sphincter, there is but little pain experienced in exploring these parts. A quantity of discharge usually follows when the finger is withdrawn. These are the prominent features of the disorder, and there is but little difficulty in recognising it if the parts are examined. The great practical error is to look upon the disease as an acute leucorrhœa, and the local pain, &c. as caused by the acrimony of the discharge. This disease differs from the diffused inflammation of the vulva in adults, by its attacking

only a limited portion of the mucous membrane of the vulva, in not being attended with general swelling, and in its obvious follicular origin. It differs from eczema, or herpes, or the aphthous state of the vulva, not only on these points, but in the absence of vesicles; and it differs from them all in its intractability.

I have every reason to believe that the cure of this affection will be found very troublesome, and second only to the prurigo which attacks woman in the late periods of life. Appropriate remedies will succeed in greatly mitigating it, and allow of comparative comfort, but the mucous membrane does not clear, and the painful symptoms are re-established by any local irritation or derangement of the general health. I have tried perseveringly many remedies, and have found most of them of only very temporary service. At first I quite hoped to get rid of the disorder by the use of nitrate of silver, with attention to the general health and an absence of sexual excitement. But after repeated trials of it, both in solution and in the stick, I have almost abandoned it. It causes extreme agony for some time, perhaps requiring the use of opium to allay it, and even the best effect of it is to relieve for a short space the tenderness of the parts. I have attempted to destroy the inflamed follicles by the free and repeated application of nitric acid with nitrate of silver, but without effect; after a monthly period they have again returned. The class of local remedies which does the most good is undoubtedly the sedative, and the most generally successful of these is hydrocyanic acid. It may be used either as a wash or as an ointment, but the latter, I think, is preferable. I have usually ordered two drachms of hydrocyanic acid with a scruple of the diacetate of lead, to be made into an ointment with cocoa-nut oil. The parts should be first bathed with some simple infusion of roses, and the ointment applied two or three times in the day on lint. It rarely fails to give much relief. Among the preparations of opium, a lotion of lime water with opium is perhaps the best. The poppy hip-bath has sometimes been very grateful to patients, and quieted irritation. A very useful application is to saturate some bread with a decoction of conium leaves, and to add two drachms of liq. plumb. diacet. to a pint of the decoction. A poultice thus made ought to be kept constantly applied to the vulva, and it will frequently assuage the smarting. Mercurial washes, although used with opium, have not in my hands been of much service. I have also tried solutions of sulphate of copper, zinc, and alum, and subborate of soda; but whilst they have varied the remedies they have been sparingly successful. The latter has been much spoken of as a local application in diseases of the external organs, but I have generally been disappointed in it. Vapour baths may be prescribed with much advantage when the irritation is severe. I have tried both the simple vapour bath, and the sulphur baths, and with decided benefit. Creosote and the tar-water bath have failed with me in materially relieving this disorder.

But while it is necessary to multiply our resources to palliate the distressing local symptoms, it is of the greatest importance to attend carefully to the general health. Any decline in health always affects the sufferings of the patient. The diet should be nutritious but unstimulating. Porter or wine should be avoided; and milk either alone or with lime-water may be taken with advantage. The patient should be desired to keep at rest as much as possible, as walking exercise always irritates the parts; and indeed it is often difficult even to mitigate the disease, if the person continues her ordinary duties, moving and walking about as usual. Sexual intercourse must be forbidden, although any injunction on this point is almost superfluous, as it rarely can be endured.

Change of air will do much to maintain the general health and diminish the constitutional irritability which appears in the course of this complaint. Vegetable tonics, as cascarilla, columba, sarsaparilla, &c., are of much use, with the tinctures of hop or conium. I have repeatedly prescribed, with much benefit, the mist, olibani of the Guy's Pharmacopœia,

made with the dec. cinchonæ. The bowels ought always to be attended to and there is no better plan than to combine a small dose of sulphate of magnesia with infusion of cascarilla or camomile. Saline laxatives are the most serviceable.

The plan of treatment which is here indicated will, I think, always afford great relief. The discharge diminishes, the pain and smarting of the vulva is appeased and the general health improves; but it does not do more than this. The diseased follicles are still there, and any neglect of the prescribed precautions, or the coming on of any exciting cause, soon excites inflammation, with the attending distressing symptoms. It only mitigates, but does not cure. When the health is recruited, however, by these means, I have in several instances, prescribed a mild mercurial course. This has usually consisted of the liq. hydrarg. bichlorid. 3j. ex. dec. sarsæ. C. c. ext. sarsæ.; and while on the one hand I have never seen any injurious result from this mode of administering mercury, I have reason to be satisfied with its influence in checking, and sometimes eradicating, this complaint. It has, however, no specific power in curing the disease, for, in three cases where I have tried it, and at first thought it efficacious, the disease has re-appeared.

There is a resemblance between the follicular disease of the valve and the small vascular growths at the mouth of the urethra, in their tendency to return when apparently destroyed. In the first disease, unless the mucous membrane from whence they spring is cut off with the growth, it generally sprouts forth again; and in the more obstinate cases of the follicular disease it might perhaps be a good expedient to dissect off the affected portion of membrane. The cicatrix which it would leave in women who have not passed the child-bearing season, would be an objection to it; but in those cases which occur after the catemenial decline, it might, I think, be advantageously adopted. *Med. Gaz., May* 15, 1846, *p.* 845.

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186.—CHLOROSIS.—By Sir H. Marsh, Bart., Dublin.

[Chlorosis in many points of its history remains to be explored and explained. We think the following views of Sir H. Marsh will interest our readers, although much of what is stated is not novel.]

There are many cases of chlorosis marked rather by an increase than a diminution of the total amount of the circulating fluid. In chlorosis there is a change in the quality, but not necessarily a change in the quantity, of the blood; so that chlorosis must be looked upon as a peculiar and distinct disease, and not identical with anæmia. In like manner hyperæmia is a convenient term to express a surplus of blood, generally or locally, but it is not expressive of any particular disease.

There is no proof of deficiency of blood in chlorosis: on the contrary, there is strong presumptive evidence that an actual excess of blood, though of inferior quality, characterizes some cases of the disease; and it is worthy of remark that, in the treatment of chlorosis, the moderate abstraction of blood by the lancet, by leeches, or by cupping, not only does not aggravate the symptoms, but, so far from this, when incidental affections demand depletion, is followed by the best effects. The disease in reality consists, not in a diminished quantity of blood, but in an altered quality—a diminished consistency of this fluid; herein lies its very essence, and any term which signifies the former, not the latter condition, is at least objectionable as applied to chlorosis. In chlorosis the blood undergoes a very remarkable change; its specific gravity is lowered: the clot is small and firm; the serum bears too large a proportion to the crassamentum; water is in excess; the red corpuscles are far below the healthy standard in quantity; their appearance, however, under the microscope, is natural; and the fibrin, in the majority of cases, is normal in quantity, firmness, and cohesive power.

In hæmorrhagic diseases, the chemical and physical characters of the blood are very different. Its specific gravity is seldom much below, and, occasionally, even exceeds the healthy standard; the separation into clot and serum is imperfect, and the clot bears too large a proportion to the serum; the quantity of fibrin is less than in healthy blood, or, at least, its proportion to the red corpuscles is less than is found in a state of health; the quantity of red corpuscles is either absolutely increased, or their proportion to the fibrin is larger than in healthy blood; and the quantity of solid constituents frequently exceeds that of the normal fluid. The clot is, in general, large, soft, and of a dark red, or almost black colour; sometimes the formation of a clot does not take place; a buffy coat is scarcely ever observed, except when fever or inflammation is present; and the serum is frequently tinged with red by the presence of red corpuscles in suspension. Under the microscope, the red corpuscles are most commonly seen of small size, with their edges lacerated and irregular; mingled with these are numerous shrivelled, apparently empty, colourless cells, the walls of which are of extreme delicacy.

[The essential symptoms of chlorosis, then, are—1st. The depression of animal heat; 2nd. The prostration of the cerebral, nervous, muscular, cardiac, pulmonary, intestinal, and uterine functions; 3rd. The characteristic hue of the tegumentary membranes. The supplementary symptoms, or complication of chlorosis, are considered in the following remarks:]

Of the complications, there are none more frequent, none more disturbing to the regular course of treatment, than the various neuralgic affections and local pains with which many chlorotic patients are afflicted. There is an intimate connexion between chlorosis and hysteria;—none are more disposed to become chlorotic than those who are hereditarily or constitutionally predisposed to hysteria. I have seen, during the progress of this affection, every variety of hysteric symptoms arise; I have also seen it complicated with chorea. Nearly allied to hysteria, if not identical with it, are those spinal tendernesses and irritations which propagate pains to every part of the body. These neuralgic pains are oftentimes so severe that the lives of chlorotic patients are rendered miserable by them; and so harrassing that every other feeling and consideration is absorbed in unceasing solicitude for their removal or mitigation.

Many individuals suffer from intense frontal headache, either constant or periodical, from acute pain in one or other of the sides, in the epigastric or hypochondriac regions, and sometimes even in the extremities. In such cases the treatment must be complex; yet whilst the leading object—the amelioration of the condition of the blood—should never be lost sight of, the means best calculated to mitigate and remove the neuralgic complication must not be omitted. In some cases, particularly those in which there exists in some part of the spinal column much pain on pressure, with strongly marked evidences of spinal irritation, it may be necessary to detract blood either by cupping or by leeches. Care, however, must be taken that the quantity of blood drawn should be small; leeches should not be too numerously applied, nor a prolonged bleeding from the bites encouraged. The operation of cupping has, in this respect, a great advantage, that there is no after bleeding, and when it can be quickly and dexterously performed it is a superior remedy. I have seen chlorotic patients permanently injured by profuse local bleeding. In general, the frequently repeated application of small blisters on either side of the spine is the preferable mode of treatment. In many cases of spinal irritation the pain and tenderness on pressure are found to exist, not along the line of the spinous processes, but on one or both sides of this line. Moderate pustulation is sometimes more effectual than blisters. For the removal of neuralgia, anodynes, particularly opium, should be sparingly and cautiously given. If it constipate the bowels and diminish the secretions, temporary relief will be often purchased at a dear price. Opium, too, by prostrating the nervous energy,

injures the respiratory function, and thus adds to the existing imperfection of the blood. It may be necessary to give an opiate—a night's unbroken rest may not be otherwise attainable; it should, however, be looked upon as a thing of necessity, and should, if possible, in chlorosis be avoided. I have occasionally observed marked advantage from small doses of aconite, and in one case of chlorosis with severe facial neuralgia, a great mitigation of pain was effected by a single dose of the canabis indica. All these potent agents, however, which lower the vital energies, are ill suited to a disease, the characteristic of which is to depress, below the normal standard, every function necessary to the maintenance of life. They should be employed cautiously; and should not be long persevered in. The local application of anodynes and sedatives is oftentimes more safe, and in efficacy not inferior to their internal administration. Lint soaked in anodyne lotions, placed upon the painful parts, and overlaid with oiled silk, is in many instances a remedy of value; so likewise is their application over a blistered surface, the cuticle having been removed. The ointment of the sulphate of veratrine (a scruple to an ounce of axunge) I have found particularly efficacious. The neuralgic pain is sometimes, but not often, removed by lightly touching the adjacent skin with heated iron. In all these complications, the first object must be to improve the blood, the second, to remove the neuralgic pains.

Among the nervous disturbances to which the chlorotic state is liable, I am disposed to class a very remarkable symptom, one by no means uniformily present, but yet so frequent as to demand a distinct consideration. That to which I refer is the variety of abnormal sounds which accompany the action of the heart and arteries. These sounds vary; sometimes the systolic sound is a sudden, loud, sharp sound; at other times it is rough and harsh; sometimes it is best represented by the quick transit of a whip through the air: more frequently it is the bellows-sound or murmur which reaches the ear. This murmur is not confined to the heart; it extends along the arteries, and the transmission of the blood through the veins is not always affected silently, a peculiar and remarkable sound being heard in some of the larger venous trunks. These abnormal sounds are not the result of organic disease, but arise solely from disturbance of function. This is an interesting and important phenomenon; important, because it establishes the fact, that sounds so frequently characteristic of valvular disease, may and do originate in mere functional disturbance.

Would it not appear that these abnormal sounds are, in a considerable degree, dependent upon disturbance of the nervous function of the heart and arteries in excitable and hysteric constitutions? Doubtless the attenuation of the blood, both in chlorosis and profuse hæmorrhage, strongly predisposes to the production of these sounds; but their immediate exciting cause is referable to nervous disturbances; so that, to give rise to this symptom, the contractions of the heart and arteries must, from causes connected with the nervous system, be imperfect and irregular. Hence the blood is propelled in broken streams, after the manner so faithfully described by Dr. Corrigan; and although an attenuated state of the blood renders this more likely to happen, yet that condition alone will not explain the phenomenon. In reference to the subsidence of morbid sound keeping pace with the improvement in the quality of the blood, it should be borne in mind, that the treatment which most effectually enriches the blood does also as effectually restore tone and healthy action to the nerves.

[Distension of the stomach after meals, from gastric and intestinal flatulence, is one of the most distressing of the incidental disturbances and perversions of the digestive functions. This pent up gas is often the sole cause of the intense pains in the various parts of the chest, shoulders, sides, and along the limbs.]

These symptoms are greatly relieved by warm, cordial cathartics; by stimulating frictions and rubefacient applications, such as mustard or turpentine, over the abdomen; and by small, frequently repeated doses of the

rectified spirit of turpentine internally. A drop or two of creosote, in a pill, to be taken thrice daily, is often exceedingly useful where given in conjunction with the compound galbanum pill. Galbanum itself, in full doses, is in some cases a most effective remedy. I have also seen marked advantage to arise from newly-burned and finely pulverized carbon; the charcoal derived from box-wood is, I think, the best; and the less the powdered charcoal is exposed to the air the more efficient it is. The following powder has proved itself, in many instances, a remedy of value: of freshly burned charcoal reduced to fine powder, a scruple; calcined magnesia, ten grains; powdered nutmeg, 5 grains. Mix. To be blended with a little milk first; then a sufficiency of water or milk added to suspend the powder, so that it may be easily taken. It may be repeated two or three times daily.

*Treatment.*—Do the resources of art furnish us with any substance, mineral or vegetable, capable of restoring to the blood its normal density, and its due proportion of red corpuscles? The answer to this question at once points to a mineral, the efficacy of which is as remarkable as that of any other medicine in the whole catalogue of remedies; neither do bark, nor mercury, nor wine, nor bleeding, nor opium, nor antimony, even when most judiciously administered, exhibit effects more manifestly therapeutic than iron does in this disease; nor does iron bring more of wealth to the inhabitants of the country from the bowels of whose earth this valuable ore is dug up, than it does of richness to the blood of the chlorotic patient. It is remarkable, too, how universally diffused are chalybeate springs, as if it were the design of nature that iron in abundance should be mingled with the blood, and that it should be incorporated largely with vegetable matter. Whether the preparations of iron produce their effects directly by augmenting the proportion of red corpuscles in the blood, or indirectly by invigorating and improving the digestive function, still there is no medicine the curative properties of which are more fully established. The probability is, that it acts usefully in both ways. Iron, then, judiciously administered, is a most valuable and important therapeutic agent. Nor is its salutary action restricted to chlorisis; there are many other pathological conditions of the animal economy over which it possesses the same power in improving the blood, and thus restoring tone to the nerves and vigour to the muscles. Often in chlorotic patients have I watched the change wrought in the system from day to day under the vivifying influence of this remedy, and most striking, and sometimes rapid, have been its health-restoring effects. Were all cases of chlorosis simple and unmixed—were it not liable to the various complications to which we have already alluded, then, indeed, the treatment were easy, and the cure certain. But this is not always the case; various co-existing affections complicate the treatment, and even forbid for a time the employment of chalybeates; besides there are individual constitutions so intolerant of iron, so peculiarly affected by it, that we are compelled altogether to forego the administration of this useful remedy. We occasionally, also, meet with patients who cannot endure it, except in quantities too small to effect a cure; we are, in consequence, sometimes compelled by necessity to look around for a substitute, and the most efficient one which I have been enabled to discover is bismuth. Under the influence of this metal I have seen gradual and satisfactory recoveries take place in persons whose idiosyncracy forbade the use of iron. I must not omit to mention the marked utility of cinchona and its salts, and of the carbonate of ammonia. Many bitter vegetable tonics, also, are productive of benefit; but I place more reliance on bismuth, carbonate of ammonia, and the salts of Peruvian bark, than on any of the other substitutes for iron which are usually prescribed.

In both chlorosis and anæmia, I have observed that the treatment has been rendered more certainly and more speedily effective, by administering iron in conjunction with Peruvian bark and the salts derived from it. Hence arises the value of the triple salt just named; hence also the efficacy of the

aromatic iron mixture, which, when united in equal proportions with Griffith's mixture, constitutes a very useful compound. I have often prescribed, and I think with excellent results, bark, iron, and ammonia conjointly in the following manner:—Decoction of Peruvian bark, ten drachms; tincture of bitter orange peel, one drachm; syrup of ginger, one drachm; bicarbonate of ammonia, fifteen grains—mix. To be taken two, three, or four times daily, in effervescence, with half an ounce of lemon juice. The compound iron pill, so prepared as to insure its solubility in the stomach, and repeated in sufficient doses three or four times daily, with the addition of about half a grain of sulphate of quinine—which, though an unchemical formula, increases much the efficacy of the compound—forms one of the most generally and certainly effective modes of administering iron.

In pill, it is less likely to produce headache than in solution; and for those who can with facility swallow pills, this mode of introducing iron into the system is at once more easy, and admits, without causing disgust of being longer continued. The saccharine proto-carbonate, diffused into a vegetable bitter, is also an excellent chalybeate. In cases which require a mild aperient, in co-operation with the chalybeate, I have found the following powders particularly useful:—bicarbonate of soda, fifteen grains; tartaric acid, ten grains; dried sulphate of iron, from one to five grains; powdered white sugar, half a drachm. This powder should be kept in a dry place, dissolved in a wine-glassful of water, and swallowed whilst effervescing. These powders I have been in the habit of prescribing for the last ten years; they were first prepared for me by the late Mr. Fergusson, of Kildare-street.

[Do we possess any treatment capable of diminishing the amount of red corpuscles, when in excess, of equal efficacy with iron in augmenting their quantity when deficient? Obviously by bleeding, abstemiousness, and evacuations, the whole mass of blood may be attenuated and impoverished, or its entire constituents wasted. On this subject, connected with organic chemistry, Dr. Freke, clinical clerk at this hospital, makes the following remarks:]

Would it not, then, be of importance if any means could be suggested whereby the red globules alone might be diminished, while the other constituents of the blood remained unaffected? Could this be accomplished by the hydro-sulphuret of ammonia? He then proceeds to express his belief in the two-fold possibility that such end might be effected, and that the hydro-sulphuret of ammonia might be possessed of the power of depriving the red globules of an essential constituent, appropriating to itself a portion of that iron which would otherwise have contributed to the formation of the red globules. His grounds for such belief were, conjointly, the known affinity between iron and sulphur, the observed effects of hydro-sulphuret and ammonia on the economy, and the supposed function of iron in the globules. In the last number of the same periodical appeared an article, headed "Researches on the Human Blood," by M. Bonnet, of Lyons, the concluding paragraph of which is as follows:—"M. Bonnet, has further remarked, that the hydro-sulphuret of ammonia destroys the globules completely, and deprives the blood of the faculty of assuming the bright scarlet colour of arterialization." Thus the suggestion put forward by Dr. Freke, three years ago, has been in a measure confirmed by the recent researches of M. Bonnet. This important practical inquiry requires further investigation—it may lead to valuable results. Whether the hydro-sulphuret of ammonia acts primarly on the nervous system, as a sedative poison, or its direct effect be to dearterialize the blood, still, as a medicine, given in well-regulated doses, it may yet be found to possess curative properties.

In the second number of the Dublin Medical Journal, May, 1832, a case of disease of the heart was published, at my request, by my late friend, Dr. Newton, in which the hydro-sulphuret of ammonia having been administered, the heart's action was reduced to forty-eight in the minute, with an

abatement of all the urgent symptoms. In other cases, too, the influence of this medicine upon the heart and pulse were very remarkable. I was led to adopt this practice by the accounts given of it by Dr. Rollo, in his work on diabetes. I may further observe, that I have been for many years in the habit of prescribing the hydro-sulphuret of lime in the treatment of diseases of the skin. I have employed it internally, in doses of from ten to thirty drops, sufficiently diluted; and externally, in the form of vapour, of lotion, and of liniment. I have reason to speak very favourably of its effects, more especially in those cases in which, from appearances at least, we should be induced to expect an excess of the red corpuscles. Might not its action be similar to that of the hydro-sulphuret of ammonia?—and might not this investigation, if fully carried out, throw a clearer light upon the manner in which the sulphureous waters of Lucan, Harrogate, Aix-la-Chapelle, &c., and the various preparations of sulphur, influence the animal economy. The inquiry is one of interest, and involves the consideration of the treatment of a large proportion of cutaneous affections.

*Dublin Quarterly Jour. of Med. Science, Nov.*, 1846, *p.* 303.

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187.—TANNATE OF IRON IN THE TREATMENT OF CHLOROSIS.—By M. BENEDETTI.

This substance, according to our author, excels all other medicines in the treatment of chlorosis. In evidence of this, he cites cases from his own and from the practice of Majocchi, affirming that the treatment by the tannate of iron is successful in from twelve to twenty-five days, according to the severity of the case. It is to be administered in doses of from eight to thirty grains in the day. It acts more rapidly in persons of sanguine temperament. The mode of preparation, as described by M. V. Gaddi, is as follows:—A very pure sulphate of iron is made by the action of dilute sulphuric acid on iron filings; from this sulphate, by means of carbonate of soda, a carbonate of iron is precipitated, which is washed several times, and then dried on the stove. It is now pulverised, and thrown by small portions at a time into a boiling solution of very pure tannic acid in a procelain vessel—the proportions used being very nearly five parts of the carbonate to one of the acid—or 440 parts of the carbonate to 90 of the tannic acid. The fluid is to be stirred constantly till the effervescence ceases. It is afterwards exposed to a heat equal to the boiling point of water, till it acquires the consistence of thick soup. It is then withdrawn from the fire, and poured on porcelain plates, and dried with the assistance of heat. The tannate of iron thus obtained is of a crimson colour, insipid, insoluble, uncrystallized, though before being dried it appears in long needles. It may be administered either suspended in syrup, or still more conveniently in the form of pills.—*Bulletino delle Scienze Mediche.*

*Monthly Jour. of Med. Science, Nov.*, 1846, *p.* 370.

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188.—USE OF ELECTRICITY AND GALVANISM IN THE TREATMENT OF AMENORRHŒA.

The latest testimony on record of the medical efficacy of frictional electricity is to be found in a report of Dr. Golding Bird, who declares that scarcely any cases have been submitted to electrical treatment in which its sanatory influence has been so strongly marked as those in which the menstrual function was deficient. While chlorosis is present, scarcely any benefit is to be expected. The rule for insuring success, in the great mass of cases of amenorrhœa, is to improve the general health by exercise and tonics, and to remove accumulations in the bowels; a few electric shocks, often a single one, will then be sufficient to produce menstruation. The

shock of a quart Leyden jar is to be passed from the pubes to the sacrum, as often as necessary, beginning about a week before the expected return of the menstrual discharge. This effect of electricity, coming from the authority it does, is of great value, and will be appreciated by all who consider the intractable nature of the state of constitution which it is proposed to relieve, and which often baffles the skill of the most eminent. Electricity is, perhaps, the only real emmenagogue that exists.

Ordinary electricity possesses several advantages over galvanism; one is that of transmission with full effect through any required part of the body. Galvanism, it is true, can be transmitted, but in a comparatively imperfect manner; some portions of a limb are more sensitive to this influence than others; the former will experience severe shocks, when the latter will feel nothing: and if the power of the current be sufficient to effect the less sensitive parts, those that are more sensitive will be acted on with intolerable energy. But the discharge of a Leyden jar will take effect even on the smallest portion of the body. The advantage which ordinary electricity possesses of throwing a torrent of dense sparks, or the aura, upon any required surface is also very great, and cannot be derived from galvanism. On the other hand, galvanism has points of superiority over ordinary electricity, as will be presently seen. In fine, electricity can never be made to exert its full control over disease, unless by the judicious allotment of each of its forms to its legitimate function.

*Dublin Quarterly Jour. of Med. Science, Nov.*, 1846, *p.* 413.

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189.—TINCTURE OF WATER-PEPPER IN AMENORRHŒA.

Dr. Eberle states that he has found no remedy so effectual in the cure of amenorrhœa as the tincture of water-pepper. Dr. T. L. Ogier, in a paper in the Southern Journal of Medicine and Pharmacy, May, 1846, also extols it as the most certain of our emmenagogues, and relates four cases successively treated by it. He says that he knows no medicine that has a more decided action on the uterus in producing the menstrual discharge. The preparation used by Dr. O. was a strong tincture made from the stem, leaves, and flowers; but he thinks that the active principle of the plant resides chiefly in the leaves. The dose was a teaspoonful of the tincture three times a day in a little sweetened water.—The American Journal of the Medical Sciences. July, 1846.

The water-pepper of Europe is the Polygonum Hydropiper—that of America, though not the same species, is closely allied to it, and probably both possess the same medicinal properties. The American water-pepper is referred to the Polygonum hydropiperoides, or the Polygonum punctatum. Though the European water-pepper is at present obsolete in medicine, it seems not unlikely that it might be applied with advantage to some purposes in practice. Merat says, "it is a plant to experiment on, to analyze, and which promises advantageous results in therapeutics." It has the reputation of being a diuretic.

*Monthly Journal of Med. Science, Nov.*, 1846, *p.* 371.

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190.—USE OF THE COLD HIP-BATH IN IRREGULAR MENSTRUATION.—By Dr. CHMELIK.

"Cold water," says our author, "exerts a double influence on the female genital organs, the one a strengthening or contracting (zusammenziehende) influence, and the latter, an attracting (zuleitende) force; this, by a prolonging action upon the genitals, attracts to them the warmth, and excites the organs to greater activity to restore their lost heat, and hence causes congestion of the parts." The author then brought his theory to the test of

practice, and was successful in many cases of amenorrhœa, where the means ordinarily employed had proved unavailing. He commenced first with the tepid, and then with the cold bath, twice daily, morning and evening, continued for half an hour each time. Generally after the use of the bath for eight days, the patient perceived a feeling of heat in the hypogastric region, and a dragging sensation in one or both inguinal regions; sometimes slight diarrhœa supervened, and in one case where menstruation had been suppressed for a year and a half, considerable swelling and inflammation of the external genitals came on. In all cases after the bath had been in use for four or five weeks, menstruation returned without the employment of any other remedial measures, and in most of the cases the catamenia had been suppressed for half a year or longer. The most stubborn cases which the author met with were those of young girls who had never menstruated, but in whom there were symptoms indicating deranged health, in consequence of the non-appearance of the discharge.

These, however, also got well after using the bath for some months: but the author candidly admits that he had not many of this latter class under his observation. The author further points out the harmlessness of this remedy, in cases where suppressed menstruation arises from concealed pregnancy; he had one case of this kind under his care, and although the patient used the cold bath, as above prescribed, for a considerable period, she went on to the full time and was safely delivered.—*Oesterreich Med. Wochensch.* *Monthly Jour. of Med. Science, Sept.*, 1846, *p.* 232.

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191.—OVARIAN DISEASE.—By S. Solly, Esq., F.R.S., &c., St. Thomas' Hospital.

[A case of ovarian disease is mentioned by Mr. Solly in a clinical lecture. The patient was an inmate of the Stoke Newington Asylum for females; she was 24 years of age. Her abdomen was much swollen and rounded, giving a distinct sense of fluctuation. There was no evidence of disease in the liver, kidneys, or heart. Mr. Solly considered it a fit case for operation, and had her removed to St. Thomas' Hospital, in order to have a consultation with his colleagues, who agreed with him as to the propriety of the step. Mr. Solly observes:]

The temperature of the room was raised to 78°. My patient was placed on a chair without arms, with a back inclining nearly on a level with the seat. She was supported by pillows in a semi-recumbent posture, but the angle of the back was such as to enable me to allow her to lie down immediately by the abstraction of the pillows, if syncope should supervene during the operation. At a quarter past twelve I went into the room, accompanied by Drs. Leeson, Cape, Bennet, and Cohen; and Surgeons Green, South, Mackmurdo, Travers, Clark, and Grainger; and my two dressers, Messrs. Tarswell and Eddowes.

I commenced the operation immediately by making an incision through the adipose tissue, which was about one-seventh of an inch in thickness, down to the linea alba. This incision was three inches in length; commenced about one inch from the umbilicus. I applied cold sponges to this incision, and as soon as they had arrested the hæmorrhage, which was very slight, I divided the linea alba very carefully without dividing the peritoneum. I next divided the peritoneum, and this exposed the sac, which was bright, smooth, and healthy. It moved up and down freely with the motion of the diaphragm; the peritoneum was most carefully divided to the same extent as the linea alba by means of a more pointed bistoury.

I laid hold of the sac with three-prong or bull-dog forceps, and then gave them to Dr. Cape. I next pushed in a trocar and canula, and thus drew off 17 pints of straw-coloured fluid. As the sac became emptied I slowly drew it out of the abdomen; it followed easily, for there was not one adhesion. This enabled me to see the peduncle, which was evidently the broad liga-

ment of the uterus, quite healthy, and of natural thickness. About midway through the uterus and the tumor, I passed a large curved needle through the peduncle, armed with ligature, which Mr. Lane recommended to me as being more tenacious than ordinary silk, and not so likely to slip. I had previously tried its strength, but neither could I nor Mr. Gard, our surgery-man, break it by any force we could put upon it; but it now unfortunately gave way, and I was only able to use it to draw through a stronger ligature, similar to that used by Mr. Walne.

Having separated my two ligatures I tied each separately in the surgical knot, exerting all the force in my power to tie them as tight as possible. I paid great attention to this point, as I had been informed by Mr. Phillips that in one of his cases the ligature had not been sufficiently secure. This part of the operation, and the drawing the peduncle out of the abdomen, appeared to give her severe pain. I then divided the peduncle so close to the sac that at one point I left a small piece of it. One half of each ligature was divided near to the knot; the cut surfaces were now carefully examined by Dr. Cape, and those immediately about me, and as there was not the slightest oozing from them the peduncle was returned within the abdomen, and the ligatures retained. A very small portion of omentum escaped from the wound, but as it was quite healthy and uninjured I returned that also. During the operation she complained occasionally of feeling faint, but by sponging the face with vinegar and water, and applying ammonia to the nostrils, complete syncope was prevented. I brought the edges of the wound together with three interrupted sutures, and applied three broad strips of plaster covering the whole with a nine-tailed bandage.

The whole operation, including the time occupied by the evacuation of the fluid, lasted half an hour. I then carried her to bed, and though she had not lost more than two drachms of blood during the operation, she was pale, low, and depressed; pulse 80, and feeble. Temperature of room 76°. A few minutes after lying down she vomited a small quantity of mucus, and complained of great pain in the abdomen; sixty minims of tinct. opii were immediately administered; shortly after she again vomited, but did not apparently return much of the laudanum. From this time the pain rather increased in the lower part of the abdomen, and as the vomiting still continued, two grains of morphia were put up the rectum by Dr. Cape's advice. At two o'clock, the pain not being at all relieved, poppy fomentations were applied over the abdomen. Within five minutes of this application she expressed herself much more free from pain, and continued comparatively comfortable till five o'clock; but during this period her pulse gradually became more feeble.

[At nine o'clock she was becoming very feeble, the pulse could scarcely be felt. About half past eleven o'clock it was observed that blood was flowing through the plasters; Mr. Solly immediately removed them, cut through the sutures, and passing his hand into the pelvis, seized the peduncle of the sac, around which a ligature was passed. This was soon accomplished, but within ten minutes after it was finished, syncope came on, from which she never rallied. On post-mortem examination, it was found that the lower division of the ligature included the inferior part of the broad ligament; the ligament of the ovary had escaped from the ligature, and its cut surface was free in the abdomen, on which an artery large enough to admit a probe opened. This part it was evident had escaped from the ligature after the peduncle had been cut away. There was about one pound of coagulated blood in the pelvis. Mr. Solly adds:]

With reference to the explanation above given of the facts of this case, it must be observed, that the part which is supposed to have retracted and escaped from the ligature is precisely that part which must have been considerably on the stretch, when the cyst was pulled from the wound in the abdominal wall, in order to put on the ligature and divide the peduncle. This part (particularly the ligament of the ovary) is very extensible and

elastic, and probably was much elongated by the traction exerted upon it before its division; it was then included in the same ligature with the fallopian tube, which was little if at all stretched, by drawing the cyst from the abdomen. After being divided, the extended part retracted and escaped from the ligature; after retraction it was, of course, shorter and thicker than it was while stretched and included in the ligature; and this change of shape and size sufficiently explains the absence of any mark which the ligature may have made upon it, as well as the apparent disproportion between the thickness of the part, which is supposed to have escaped from the ligature from which the escape took place.

The ovary on the left side had precisely the same relations and connections as the cyst had on the right side. This is clearly seen in the preparation of the parts. A moderate amount of traction on this ovary after death was found sufficient to double the length of the ligament of the ovary, and of course to diminish its thickness in the same proportion. When the traction was discontinued the elasticity of the parts at once restored the original length and thickness. I am inclined to believe that the ligature must have slipped just two hours after the operation, when the fomentations were first employed, and the pain suddenly ceased, and she became more faint. But the most important and interesting question to us all is, how are we to prevent so sad an occurrence? One plan which has been suggested is, that after tying the ligature the needle should be again run through the peduncle so as to stitch it in its place. The objection to the proceeding is, that it might delay its ultimate removal.

In one of Mr. Lizar's operations the ligature did not come away till the seventy-sixth day. I believe the better plan is that which, I understand, is now adopted by Dr. Frederick Bird. I understand that this excellent operator does not include in his ligature the fallopian tube, and only that portion of the peduncle which appears to contain vessels, tying any others separately that may require it. I have just learnt from Mr. Lee, who has obtained the Jacksonian Prize for this subject, that the number of cases which have now been operated upon amount to 103, and that the success is in the proportion of one to three and a half; but the success which has attended Dr. Frederick Bird is most satisfactory and highly important. In a letter which I received from him a few days ago he thus expresses it:

"The operations occurring to myself include cases of unilocular, multilocular, and colloid forms of ovarian disease; in the majority of these, adhesions existed over the anterior surface of the tumor, and in these instances the base of the cyst adhered firmly to the pelvic organs. In no case has a fatal termination resulted; the return to health has been rapid and complete.

In not more than one case have inflammatory symptoms arisen, and then scarcely assumed an acute or dangerous type. I have always relied upon prophylactic rather than remedial means, and I believe if this point were more generally insisted upon there would be little wanting to render the excision of diseased ovaria in proper cases one of the most successful operations in obstetric practice. The ages of the patients have ranged between eighteen and twenty-two, thirty-five and forty-five, one only having been above fifty years of age."

I should not, however, be doing justice to this operator, if I did not advert to the pains which he takes, and the attention which he pays to his patients after the operation. There are many men, who, after having performed it skilfully and successfully, have not the patience to attend to all those minor details on which the success of the operation appears mainly to depend. *Med. Gaz., July* 10, 1846, *p.* 55.

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192.—NEW OPERATION FOR OVARIAN DROPSY.—By Professor Kiwisch.

The mode of operating will be best explained by quoting one of the author's cases. A peasant, æt. thirty, the mother of four children, of which

the youngest was only a year old, was received into the hospital at Prague on account of obstinate ischuria and constipation. The cause of these affections was found to be a tumor, the size of a head, lying between the rectum and the vagina. By careful examination the operator was satisfied that this tumor was not formed by the uterus, but by an enlarged ovary containing fluid.

With a curved trocar a puncture was made in it, through the vaginal parietes. Through this about nine pounds of a chocolate-coloured fluid was drawn off, upon which the sac completely collapsed, and the uterus, which had been pushed high upwards and forwards on the brim of the pelvis, returned to its natural situation. The canula was left for thirty hours in the wound, to permit all the fluid to drain off. In ten days it was necessary to repeat the operation, and on this occasion the opening made by the trocar was so far dilated with a bistoury that a finger could be introduced into the sac; several pounds of fœtid bloody pus and numerous flakes of lymph were removed. Water was injected into the sac with considerable force, and in order to keep the opening pervious, a thick curved uterine tube of tin was introduced into it, and fastened in front of the external genitals. During the ten days following the operation there was considerable fever and a good deal of fœtid discharge; but at the end of a fortnight the discharge improved in quality, and diminished in quantity; the tube was then removed for some hours daily, so that the patient was permitted to take some exercise, and from this time she gradually recovered. In four weeks the wound had contracted so much that the tube could not be again introduced; and in about six weeks from the date of the second operation, the patient was dismissed cured. A year after this the author again saw the patient; she was then in perfect health; the uterus was in its normal condition and situation, and behind it the remains of the sac could be felt as a small, hard and easily mobile body, causing not the slightest inconvenience.

The author states that the following conditions are necessary to insure success:—1st. That there be no other complication, and that the tumor be unilocular; this is to be proved by its being entirely emptied by an exploratory puncture with a trocar. 2nd. That the cyst contain not more than fifteen pounds of fluid. 3rd. That the opening made be large enough to permit the easy introduction of the finger. 4th. That the injections of water be of such a temperature as shall be agreeable to the patient, and that they be thrown deep into the sac. 5. That the tube introduced into the opening be withdrawn at intervals, and that its use be not entirely laid aside until the opening has become contracted, and the discharge has become solely purulent; if the opening contracts prior to this, it must be again enlarged with the knife. Three other patients on whom the author operated, died from the effects either of the operation, or the previous disease. Of twenty-five cases which had been under his care, three only were radically cured.—Prager vierteljahrig fur heilk, 1846.

*Monthly Jour. of Med. Science, Sept.*, 1846, *p.* 230.

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193.—NEURALGIA OF THE UTERUS ARISING FROM DENTITION.—By R. Davis, Esq., London.

[Mr. Davis records, in the Lancet of Aug. 1st, 1846, the case of a lady, who, six days after labour, was attacked with severe pain in the region of the uterus. It was of an intermittent character, and during the intermissions she had pain in the face. Leeches, fomentations, &c., were applied to the abdomen, and calomel and opium given internally. He remarks:]

The pain in the face now became more severe, and the patient, supposing it to arise from toothache, surrounded the parts with flannel. This circumstance led to inquiries on my part, which ended in an examination of

the mouth, when I found the posterior part of the gum enlarged, red, and swollen. The mystery was explained. One of the dentes sapientiæ, the cause of all the pain in the uterus, was coming up; the gum was freely lanced; and the pain in the uterus from that moment subsided. No more medicine was required nor given. *Lancet, Aug.* 1, 1846, *p.* 125.

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194.—ADVENTITIOUS NIPPLES DURING LACTATION.

[The following case of supernumerary mammæ, is communicated to the Lancet, by Dr. Ashley.]

Mrs. F., residing in this neighbourhood, immediately after her first accouchement, experienced in both axillæ, for the first time, a peculiar sensation, which was accompanied by the growth of a tumor. It was ascertained, on examination, that a swelling of the size of a common fowl's egg had appeared under each axilla; a small nipple was also observed on the summit. These abnormal growths sometimes increase much in size, but after suckling they gradually decrease, until they become no longer apparent. The same peculiarities have occurred after each accouchement, excepting, that since the birth of the third child, a jet of milk has occasionally issued from the abnormal nipples during suckling. The natural mammæ are somewhat affected by these adventitious forms, they are scarcely so large as is usual in healthy females of the same age, and the secretion of milk is not so plentiful. Mrs. F. is the mother of five children, and apparently free from all other irregularities of formation.

*Lancet, Aug.* 22, 1846, *p.* 227.

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## VARIOUS SUBJECTS.

195.—ULCERS:—TREATMENT OF BY TURPENTINE INTERNALLY, WITH REMARKS ON THE OPERATION OF THE REMEDY.

[It appears that Mr. Hancock has been desirous of trying the suggestion of Heister in his work on Surgery, who mentions the "known" virtues of tinctures of balsamic essences for promoting the secretion of urine, and very properly prescribed in the case of ulcers. But he also adds that his attention was directed to it by Mr. Fayrer, who had witnessed the success of Dr. King's practice of Haslar Hospital, who first had the credit of introducing it; but, like a wise tactician, who wishes to do credit to his resources, Mr. Hancock says:]

I do not mean to assert that turpentine is a specific in the cure of ulcers; on the contrary, we have seen, that in some forms, as in the case of Anne P——, its exhibition was decidedly injurious: but in order to simplify my description and save your time, I will adopt the arrangement of Sir E. Home, and classify them under three heads—those which are prevented healing by excess of action, those by deficient action, and those by specific action. It is in the second of these classes that I have found turpentine of so much value: where the wound is sluggish; where the surface of the sore is smooth, without granulation, or of a greenish, foul appearance; where the discharge is serous and the edges of the sore rounded, smooth, and callous; and where the surrounding skin is of a pink or blue colour—in fact, in that form of disease constituting by far the largest proportion of ulcers which fall under our observation.

From the cases which I have narrated to you, as well as from others in which I have employed this remedy, at this time amounting to above one hundred in number, I am convinced that it should not be exhibited where the patient is plethoric, or where the wound is complicated with much acute action in the surrounding parts, or where the pulse is fuller and more fre-

quent than natural; as when this condition prevails, I have invariably found the patients do badly under its administration, in some instances suffering from restlessness, severe headache, and nausea, and in all from unhealthy action in the wound itself. Where, however, the condition of the patient is opposed to this—where the circulation is languid—where the constitutional powers are from any cause depressed—the turpentine, administered as in the cases to which I have alluded, will be found a most efficient remedy, producing healthy granulation in chronic indolent sores, and promoting reparative action in the part.

The good effects upon these wounds will usually be apparent in one or two days; the ulcers change in character, their surfaces becoming covered by small regular granulations, secreting healthy thick pus, whilst the surrounding skin gradually returns to its healthy condition; and this improvement in the appearance of the parts is usually accompanied by subsidence of pain. Some of the patients have informed me, that shortly after taking the medicine they have experienced a considerable degree of smarting in the wound, lasting for about an hour, after which they remained perfectly easy until they repeated the dose.

In some few instances patients have objected to the remedy on account of its unpleasant taste, some alledging that it made them feel tipsy, or gave them the headache; others, that it created nausea; but in general, the beneficial effects have been so evident, even to the patients themselves, that I have not had any difficulty in persuading them to continue its use. When, however, I have been certain of its producing nausea, or any of these unfavorable symptoms, I have either discontinued its use altogether, or substituted the oil of cajeput in doses of three drops three times daily, with very good effect. But these objections can now be obviated by administering the turpentine capsules, made by Messrs. Evans and Lescher, each capsule containing from twenty to twenty-five drops of the turpentine. The capsule is made of membrane or bladder, which, from its yielding nature, is much more easily swallowed by the patient than the gelatine capsule originally introduced. Now, as the last modus operandi of turpentine in producing these results, Dr. Pereira has observed, that in small doses of from six to eight drops to one drachm, it creates a sensation of warmth in the stomach and bowels, becomes absorbed, circulates with the blood, and in this way affects the capillary vessels, being thrown out of the system by the different excretory vessels on the secerning vessels on which it acts in its passage through them.

When the turpentine has been administered for a day or two, we find a healthy action ensue, granulations spring up, there is a healthy secretion of pus, and without the urine is loaded with an excess of animal extractives, this cannot be the result of a subsidence of inflammatory action, and a concomitant absorption and exudation of the blood plasma. But may we not more fairly conclude that the turpentine in these doses acts as a healthy stimulant to the digestive organs, producing a more complete assimilation of the food, and that, consequently, the patients are better nourished? We may in this way, account for the increased quantity of animal matter discovered in their urine. *Lancet, October* 3, 1846, *p.* 366.

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196.—THE APPLICATION OF PRISMATIC REFLECTION TO THE INVESTIGATION OF DISEASE IN THE OPEN CAVITIES OF THE BODY.—By Dr. A. WARDEN.

[Dr. Warden has invented an ingenious modification of the speculum, for examining the condition of the external meatus and other passages; he has invented certain descriptions of instruments, by which an adaptation of a reflecting prism and tube, the condition of an internal surface may

be ascertained. In Retrospect, Part XIII., we referred to some of his instruments.]

He remarks, that the operation of breaking down the stone in the bladder is conducted through the medium of a straight tube one-third of an inch in calibre. Through canulæ of narrower dimensions, and twelve inches long, he can recognise, with the aid of the prism, the precise condition and aspect of the surface presented at the further extremity of the instrument, or over which it may traverse; and, what is of more every-day importance and easier range, he has submitted to ocular inspection stricture in the urethra. He has marked the puckering of the mucous membrane at the strictured part, observing the passage itself to be contracted so as to admit little more than a bristle; and that the diseased structure had not only the solidity discoverable by the bougie, but the varied characters demanding a severe and immediate, or a palliative and temporising treatment. He also conceives that important service may be derivable from the prism and canula in the unforeseen difficulties in the extraction of the stone, which occasionally occur in the operation of lithotomy; likewise, in the exploration of gun-shot and other wounds, where foreign bodies lodge and require to be extracted. It may be anticipated, he thinks, that in some cases of preternatural labour, also in fixing ligatures on polypi of the uterus, and in many of the most prevalent diseases of females, the principle of prismatic illumination is fitted to extend our acquaintance with the precise characters of those morbid affections whose treatment is unsuccessful only because our knowledge is inexact, or altogether deficient. In the case of the nasal passages, Dr. Warden considers that ozœna and other forms of ulcer, as well as early stages of polypus, might be thereby recognised, and more certainly treated or eradicated; also light may be (literally) thrown upon the forms of deafness connected with the eustachian tube.

He further mentions, that he has proved, on the dead subject, the practicability of passing a straight tube, of half an inch calibre, and two feet in length, by the mouth into the stomach, without leaving any mark of abrasion or injury of the soft parts in its passage. He admits that the importance of such a reach of ocular observation is not, at present, very obvious, but through a tube of the size described, he is persuaded that he could depend somewhat on throwing light, by means of the prism, upon the character of a diseased surface presented at its further extremity, or over which it might traverse; and, in proportion as its length was diminished, so as to bring the object nearer to accurate vision, as would be the case in stricture and other affections of the gullet, the view and indications will be proportionally clear.

Referring to the adroitness with which conjurors appear to pass straight instruments from the mouth into the gullet, he mentions that Mr. Anderson, the Wizard of the North, has engaged to put him in communication with several persons whom he knows *bonâ fide* to have performed this feat a hundred times, and he watches to avail himself of such an opportunity for testing the instruments, divested of the agitation of a patient under any real emergency; a good illustration of the principle that a really philosophical inquirer will never disdain means, however humble, that may tend to elucidate the problems upon which he labours.

*Medical Gazette, July* 24, 1846, *p.* 165.

Mr. Avery, surgeon to the Charing-cross hospital, has lately gained the prize from the Society of Arts, for his ingenious method of inspecting certain internal passages of the human body, by reflecting a powerful and concentrated light through highly polished metallic tubes. By this valuable discovery we are enabled to examine the rectum as well as the vagina, to see well into the larynx as far as the cordæ vocales, and several inches down the urethra, so as clearly to distinguish the narrow aperture of a stricture at a considerable depth from the orifice. These inventions are not only ingenious, but will not fail to prove of great practical utility to the

surgeon, and must confer lasting honour on the gentleman who has brought them to their present degree of perfection and efficiency.

*Prov. Med. and Surg. Journal, Aug.* 12, 1846, *p.* 379.

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197.—NEW REMEDY FOR TOOTHACHE.

[Sulphuric æther, saturated in the cold with camphor, and then a few drops of liq. ammoniæ added. It acts as a cautery. M. Cottereau, who has employed it for four years, says it is always attended with success. The rapid evaporation of the æther causes a slight deposit of camphor in the dental cavity, and this protects the nerve from the air. The ammonia cauterizes.]

*Med. Gaz., Oct.* 23, 1846, *p.* 728.

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198.—MINERAL POISONS.

[MM. Sandras and Bouchardat recommend as an universal antidote for the mineral poisons, the persulphuret of iron in such quantities as to be always in excess in the intestines, to prevent the reabsorption of the poisonous matter. They administer first a purgative, and order a soap-bath, then give the patient a mixture of syrup and persulphuret of iron night and morning. Opium, strychnia, or belladonna may be employed at the same time. Two cases only proved fatal out of 122 with lead colic thus treated, and the others were rapidly cured.] *Med. Gaz., Oct.* 23, 1846, *p.* 728.

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199.—RESULTS OF DRINKING.—By W. Ormerod, Esq.

Of all diseases of internal organs produced by drinking, the granular liver seems to have attracted most attention; perhaps justly; but there is no doubt, that of all organic diseases, the two most to be feared in intemperate persons with recent surgical injuries, are the granular kidney, and slight, but general emphysema, with a dilated, but not always much diseased heart; and in persons past the middle of life, dying rapidly in hospitals after operations and surgical injuries, combined with much loss of blood, these two affections of the urinary and respiratory organs are very far from uncommon. The three chief affections destroying patients after operations and injuries—namely, the general habit produced by drinking; secondly, organic disease of the lungs and kidneys, especially emphysema in the former, and granular disease in the latter; and, thirdly, tubercle—act very differently, and at different periods. During the early period, and often for weeks after operations, patients labouring under tubercular disease do well; and it is often only at the absolute return to health, rather than during the recovery of the patient from the operation itself, that the effects of tubercle begin to show themselves. Organic disease produced by drunkenness, and habitual drunkenness, act differently; the organic disease presses heavily at every period, and may destroy life early or late; but the mere habits of the drunkard show themselves chiefly at a very early period. The patient who nearly sinks from his unsound organs within the first few days, often lags on for weeks and months in danger; but the man who has simple delirium tremens is taken ill directly, and often dies; but if he recovers from his delirium, he generally gets well from the operation, and sometimes quickly. *Lancet, Oct.* 17, 1846, *p.* 430.

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200.—NEW MODE OF PREPARING ADHESIVE AND STRENGTHENING PLASTERS OF INDIA-RUBBER.

The articles we employ in the preparation of the plasters, are those known in commerce as caoutchouc, or India-rubber pine gum (obtained

from the southern yellow pine, commonly termed "long-leafed" pine), Cayenne pepper, balsam of Peru, litharge, and spirits of turpentine.

The proportions are five pounds of India-rubber, reduced to fine shreds, steeped in soft water for softening it, then put, with sufficient quantity of spirits of turpentine to cover the India-rubber, in a vessel; the quantity to be increased as the gum absorbs it up. When the rubber is sufficiently dissolved, it is to be pressed through a fine sieve. Four ounces of capsicum annuum, or Cayenne pepper, are heated in a quart of spirits of turpentine. A portion of this tincture is ground with a pound of litharge, and then mixed with the remnant of the tincture, and to it is added six ounces of the balsam of Peru. Then melt a pound of pine gum, and add spirits of turpentine until it is thin enough to strain, and finally, all the preceding are mixed together.—Chemist. *Lancet, July* 11, 1846, *p.* 49.

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### 201.—MEANS OF PREVENTING BED SORES.

The thicker the cuticle, the more it will protect the parts beneath; you may if you attend to it in time, add to the thickness of the cuticle by stimulating the surface of the skin. Nurses know this very well, for when patients are bed-ridden, they wash the parts subjected to pressure, with brandy. What is still better, is a lotion composed of two grains of bichloride of mercury to an ounce of proof spirits. When you think that a patient is likely to be confined so long in bed that sloughs may be found on the os sacrum, begin at an early period to wash the parts two or three times a-day with this lotion. I have found it useful in other cases where a patient suffers from pressure. For example, in a case of hernia, which requires to be supported by a very powerful truss, the truss galls and frets the skin, and may at last cause inflammation and sloughing; but, under the use of a stimulating lotion, a thicker cuticle is generated, and such mischief is avoided.—Sir B. Brodie's Lectures on Pathology and Surgery.

*Med. Gaz., June* 5, 1846, *p.* 992.

# A SYNOPSIS,

CONTAINING A SHORT ABSTRACT OF THE MOST PRACTICAL ARTICLES IN THE FOREGOING PAGES OF THIS VOLUME; AND SHOWING AT A GLANCE THE MOST IMPORTANT INDICATIONS OF TREATMENT BY DIFFERENT WRITERS, PUBLISHED WITHIN THE LAST HALF-YEAR.

## DISEASES AFFECTING THE SYSTEM GENERALLY.

FEVERS.—*Typhus.*—Besides light, ventilation, and good air, shave the head; apply four or six leeches to the temples, which will not be contra-indicated even with general debility, requiring the exhibition of wine; do not apply intense cold. If insomnia persist, this local depletion acts, as in some forms of ophthalmia, by relieving the distended capillaries, while tonics, at the same time, give them and the general circulation, strength. If you decide on applying cold instead of ice, take a single fold of linen, dipped in cold lotion. Do not continue the use of opium unless it procure sleep, or it will act injuriously upon the nutritive functions, both secretion and excretion. If the tongue be moist, and urine abundant, give opium if required, but if it become dry and brown in the centre, urine high coloured and scanty, and the nutritive and secretive functions be deranged, opium will act as a poison, and mask your diagnosis. Hyosciamus, as it does not interfere with these functions, will be more advisable. In the coma, without strong vascular action, use blisters rather than persist in bleeding; the blistering plaster may be cut in strips of an inch wide and applied, from ear to ear. Counter-irritation, also, by means of croton oil and ung. hydrarg. mixed, may be used. Look well to the bladder; do not trust to nurses, and, when necessary, introduce the catheter. Mark well the crisis, as shown by the secretion of urate of ammonia, or urea, or by long sleep and perspiration; where the latter is too profuse, about the sixteenth or seventeenth day, there is much risk. In common inflammatory fever, it is advantageous about the second or third day, but in typhus it depresses the system to extreme exhaustion. (Dr. Corrigan, p. 1.)

Diarrhœa should not be stopped too soon. Let the bowels be well cleansed. Give a little magnesia or lime water, or, after repeated dejections, the cretaceous remedies, with opium. If too violent, stop it by calomel and opium; a grain, half, or quarter doses may be given at intervals, according to circumstances. If there be attendant tenesums or dysentery, give an opium enema; and in the worst cases it may be composed of three or four grains of acet. of lead, and a half or one grain of acet. of morphia, with an ounce and a half of aq. distillata. For the typhoid fever after diarrhœa, the best treatment is the expectant. Allow plenty of fresh air, and cool, simple diluents to drink. Change the bed linen frequently, and often sponge or dowse the skin all over with cold water, if practicable. Consider it a rule, that what is agreeable to the patient is useful, and allow him in reason what he likes. If head symptoms be present, use the cold douche: wrap the patient up to his neck in a blanket, and pour three or four pitchers full of water from a height of a few feet upon the head three or four times a day. Apply counter-irritants to the neck, or behind the ears, in extreme cases. Arrest any irritation of the bowels which proves debilitating, with the cretaceous mixture, ℥j., every three or four hours. Where there is aphthæ, wash the affected parts with a lotion, composed of two grains of the nitrate of silver, a few drops of nitric acid, and eight ounces of distilled water. For the diarrhœa which supervenes, give small doses of sulphate of quinine, sulphuric acid, and one-sixth gr. doses of sulph. copper, dissolved in any suitable vehicle; or acetate of lead combined with opi-

um, or acetate of morphia in pills, made with bread-crumb. These also may be administered in enemata. (Dr. Laycock, p. 32.)

Iron in fever may be given in form of mist, ferri. c., made with the sesqui-carbonate of ammonia instead of carbonate of potash, in cases of urgent debility, as soon as gastric disturbance will admit, and where an adynamic condition of constitution and sinking of the vital power is threatened, which is evinced by a dull or dusky colour of the eruption, and a cool state of skin. The iron may also be combined with the valerian. If coma supervene, turpentine internally, or by enema, as recommended by Dr. Copland, is valuable. Symptoms of inflammatory fever contra-indicate the use of iron. (Mr. Tuckwell, p. 40.)

SCROFULA.—Iodide of iron in syrup, four grs. in twenty-four hours, continued not longer than a fortnight or three weeks at a time, then give aperients, and resume the iodine. The hydriodate of potash may be given more freely. Chloride of barium is very useful in cases of tallow-like complexions, pale tongue, and languid circulation, with irritability of the mucous surfaces. Make a solution of one gr. to ʒj. distilled water, and ten drops of tinct. gent. c., then take half oz. twice a day, and increase the dose if necessary to three grains daily.

Hydrochlorate of lime, ʒi. to ʒxx. aq. dist., and give a teaspoonful in milk two or three times a day. The dose may be increased to two teaspoonfuls. It, as well as the alkalies and burnt sponge, is of doubtful value.

Cod liver oil is useful by improving digestion and nutrition, rather than by the specific value of the iodine or bromine it may contain. (M. Phillips, p. 121.)

In scrofulous abscesses, white swelling, chronic eczema, goitre, ulcerated ganglia, herpes, lichen, ulcerated lupus, maculæ, ophthalmia (chronic) complicated with ulcerating keratitis, have received much benefit by treatment with the new triple compound of chlorine, iodine, and mercury. "Iodhydrargirite de chlorure mercureux." (M. Rochard, p. 124.)

GOUT.—Mr. Donovan strongly recommends Sir Everard Home's formula for the procuration of the most active and best effects of the powers of colchicum. He directs two pounds of recent bulbs to be macerated with twenty-four ounces of sherry wine in a gentle heat for six days. He, however (with Professor Quadri), thinks the use of the proximate principle, colchicina, would be the most invariable in strength and therapeutic effect. If Sir E. Home's formula should be adopted, it should be kept in two states, one with the deposit and the other without it. He says, colchicum bulbs contain both extractive and mucilage; when the vinous solution is strained and allowed to stand, a considerable deposit is soon separated. This deposit, he adds, is not only active, but virulent, as six grains given to a dog produced twenty-four hours vomiting and purging. It operates in every respect like the eau medicinale, in removing the pains of gout. It may be given in small doses first, and increased to 90 drops. The seeds beaten into a mass with mucilage, and divided into pills, act as a brisk cathartic, and give complete relief in facial neuralgia. The acteum colchici, neutralised with magnesia, and combined with some sulphate of magnesia, is considered by Sir C. Scudamore, the best formula for gout, as it is inoffensive to the stomach, and certain in its effects on the bowels. Dose ʒss. to ʒiss. (Mr. Donovan, p. 135.)

LAND SCURVY.—Dr. McNab employs mineral and vegetable acids; preparations of iron; bitters, as cinchona, chyraetta, wine, beer, &c. He says the only curative is change of air, and that death is nearly certain without it. It is the "ultima et unica remedia." (p. 126.)

## AFFECTIONS OF THE NERVOUS SYSTEM.

TETANUS, *Traumatic.*—In the early stage give calomel and opium; which failing to relieve, calomel three gr., tartarised antimony half a gr., opium two gr., every three hours, and a double dose every night. An enema in the morning. (Mr. Greenhow, p. 54.)

Owing to an attempt to extract a tooth. It was broken when the patient had hardly recovered from the menstrual state; it recurred, however, before the tetanus subsided, but there was not complete freedom from it until the menstruation ceased. On the 3rd day blistered from the temple to the chin, and the blister dressed with an ointment of ung. hydrarg. and morph. mur. Bags of ice were applied to the whole track of the spine, and one gr. of morph. mur. was given every hour until stertorous breathing was induced. (Dr. M'Girr, p. 52.)

TRISMUS NASCENTIUM.—As much one of the opprobria medicorum as ever, both as to its pathology and its treatment. Post mortem examination, with the consideration of the peculiar relationships of the excito-motor system of nerves, can alone lead to a just estimate of its true cause, and point to its proper treatment. Curling found "Increased vascularity in the substance of, and in the membranes enveloping the upper part of the spinal cord." So also Dr. Thompson, of Philadelphia. Billard found "An effusion of a quantity of coagulated blood in the spine, from a rupture of the minute vessels of the medulla—a spinal apoplexy." Dr. Sims points out a remarkable irregularity in the feeling of the bones:—The child had lain, during the whole of its illness, exactly in one position, the weight of the head resting wholly on the os occipitis; the latter pushed in upon the brain, being overlapped for a quarter of an inch or more along the whole course of the lambdoidal suture, by the edges of the ossa parietalia; the superficial posterior vessels full of black blood, and a coagulum occupying the whole length of the cord, enveloping perfectly the medulla; spinal veins full of black blood. Treatment to consist in the removal of immediate or remote causes of the congestion, by care as to the position of the child's head, by placing it on its side, so as to take off the weight of the body from the os occipitis. (Dr. Sims, p. 31.)

HYDROCEPHALUS.—The external application of mercury may be ordered to be rubbed in or smeared on the leg (inside) every twelve hours, and covered with a stocking made to tie lightly above the knee. Small doses of iodide of potassium (one gr. every three or four hours) may also be given. (Braithwaite, p. 133.)

DELIRIUM TREMENS.—Whilst the tongue and mouth are moist, and urine abundant, don't be afraid of giving opium for the purpose of procuring sleep when needed; but be careful if these symptoms are not present. (Dr. Corrigan, p. 27.)

PARALYSIS.—Besides other modes of treatment, make use of electro-magnetism, which may be useful in

1st.—Partial paralysis from congestion. Time, friction, change of air, strychnia, and restoration of the general health, may succeed; or electro-magnetism, applying one of the conductors, covered with wet linen, over the trunk of the largest nerve of the affected part, and the other, similarly prepared, over the region of the palsied muscle, for some minutes. The remedy may be continued for some time.

2nd.—Paralysis of muscles supplied by the portio dura.

3rd.—Local paralysis, involving the whole or part of a limb from exposure to cold. One conductor to be placed over the lower cervical spinal region, the other passed down the arm.

4th.—Paralysis affecting one side of the body or a single limb, the result of exhaustion. This case was a lady of weak and strumous diathesis, and

was exhausted by nursing, the left arm becoming palsied. Under generous diet, weaning, and electro-magnetism, the paralysis was cured.

5th.—Paralysis from hæmorrhage or enervation.

6th.—Rheumatic paraplegia. One conductor being pressed against the sacrum, the other placed in a basin of salt and water, in which the feet are immersed.

7th.—Paraplegia from sitting too long in the bent position, as at the desk, or any cause which keeps the body bent forwards. Due nourishment, rest in the recumbent position, iron or zinc, and electro-magnetism, subsequently, will generally succeed.

Cautions.—Electro-magnetism acts most effectually in cases of recent attack. In old standing cases, the remedy must be perseveringly applied, or no benefit will accrue. Do not use this remedy because paralysis exists. In truly organic lesion it may often be mischievous, especially where there is subacute inflammation, or a highly irritable state of the spinal marrow.—(Dr. G. Bird, p. 55.)

In obstinate paralysis after apoplexy give brucine, a centigramme (1-154 gr. Fr.,= 1-6th gr. avoir.) in infusion of arnica; increase the dose one centigramme daily, until its effects are evident, and then proceed discretionally. (M. Bricheteau, p. 59.)

ANÆSTHESIA.—Treated by electro-magnetism, and cured by the application twenty-two times, from an hour and a half to two hours sitting each time. The current passed down the whole spine half an hour; then from each side of the sacrum to each foot for half an hour; then from the spine to the abdomen for half an hour. (Mr. Christophers, p. 58.)

EPILEPSY.—Iodide of potassium three grains three times a-day, and the mouth to be affected by blue pill. (Dr. White, p. 65.)

SCIATICA.—Treated with moxas. Tincture of guaiacum and aconite was prescribed and the dose increased. Aconite plaster over the seat of pain. Cupping over the part, and afterwards two grs. calomel and one gr. opium; then a mixture of vin. colchici and tinct. aconite: lastly, six moxas; since which the case has done well. (Dr. A. T. Thomson, p. 59.)

NEURALGIA.—Apply a blister as soon as possible to the trunk of the nerve, and sprinkle upon the surface from half a grain to a grain of morphia every morning. Attend to the general health at the same time, giving internally every night pil. hyd., pil. aloes, ext. acet. colchici, aa. gr. iij., and five grains of iodide of potassium thrice a-day in any convenient vehicle. This endermic method has succeeded when leeches, blisters, moxas, belladonna, arsenic, iron, iodine, turpentine, and guaiacum have entirely failed. (Dr. White, p. 61.)

When other treatment (as valerianate of zinc and quinine, &c.), fails, try a very strong decoction of coffee at the commencement of each paroxysm of pain. (M. Piorry, p. 62.)

CHOREA.—As the causes are various, so the treatment must be according to the circumstances of each; for the weak and delicate, ill-fed, and ill-clothed, half a dr. rhubarb macerated twelve hours in port wine; and in quantity, given according to the age of the patient, three times a-day. If a loaded condition of the bowels, or worms, or improper aliment, purgatives and a strict attention to dietary. If connected with absence or deficiency of catamenia, cupping on the loins, hip-bath, aloetic purgatives, and a combination of steel, ammonia, and aloes. If an inflammatory affection of the pericardium, antiphlogistics, cupping, leeches, blisters, calomel, antimony, opium. If from inflammatory thickening of the spinal theca, or disease of the brain, local and general treatment on common principles. The mineral tonics appear to possess nearly equal advantages, but the cases for their application must be peculiarly chosen, and then the benefit will be enhanced

by combination with the vegetable tonics and purgatives. Electricity is of very doubtful efficacy. (Dr. Hughes, p. 290.)

Cleanse the bowels, and give the following:—℞. Ferri subcarb. sacch., sodæ bicarb., aa. gr. ij.; pulv. aromat. gr. j. ft. pulv. ter in die sumendus. Use the tepid shower bath, and if the above powders does not what is expected, try oxidi zinci, sacchari albi, aa. gr. iij.; M. ter in die sumendus, and increase the dose if necessary. (Dr. Bellingham, p. 62.)

HYSTERIA.—Often accompanied with retention of urine from spasm about the neck of the bladder. Evacuate the large intestines, by an injection of turpentine and assafœtida. Use the cold hip-bath, and cold douche. Regulate the catamenial function, and then give stimulating tonics, good diet, warm clothing, and exercise. (Dr. Todd, p. 63.)

Give the pil. galb. co. when the large intestines are disordered as shown by pain in the left side. (Dr. Munk, p. 63.)

Give valerianate of zinc. (Dr. Lever, p. 64.)

SPINA BIFIDA, *Operation for.*—The base of the tumor may be compressed between two rods of wood directed in the line of the vertebral column, and at first brought into single apposition; then punctured with the trocar, and as the cyst empties, the pieces of wood may be more approximated, so as to bring the two surfaces of the serous membrane into contact. The rods may be removed on the tenth day, and on the fifteenth the second ligature may probably fall off. (M. Latil de Timecour, p. 159.)

As some constitutional symptoms frequently supervene upon operations for spina bifida, too much precaution cannot be taken to secure the evacuation of the sac as gradually and in as constant a manner as possible; and that operation which appears the most suitable for attaining the end should be adopted, and, above all, timely put in practice. (Mr. Dumville, p. 160.)

TOOTHACHE; *New Remedy for.*—Cold saturated solution of camphor in æther, to which a few drops of liquor ammonia are added. (M. Cottereau, p. 324.)]

*Caries of the Teeth.*—Scrape out the entire of the softened carious part, and rub its interior with a saturated solution of nitrate of silver, or with pulverised nitrate made wet. (p. 197.)

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### AFFECTIONS OF THE CIRCULATORY SYSTEM.

ARTERIES, *Wounds of.*—On treatment of wounds of arteries, observe as follows:

1st.—No operation to be done upon a wounded artery unless it bleeds.

2nd.—That no operation is to be done for a wounded artery in the first instance, but at the spot injured, unless such operation be impracticable.

*Brachial.*—If compression do not suffice, bare the vessel, and place a ligature above and below the wound. If above the edge bicepital aponeurosis, cut down, place one ligature just above the seat of injury; do not open the aneurismal sac, nor look for the vessel below it; use moderate pressure along the sac; observe the horizontal position, and, if necessary, deplete.

*Ulnar*, trunk of, upper third.—Cut boldly down upon it through the muscular structure, and apply a ligature above and below. In wounds of the ulnar in the hand, secure always by ligature.

*Radial.*—Tie where practicable; where not, try compression; but if swelling of the hand prevent this, tie the radial above, and compress the ulnar or the brachial itself from time to time, or, as a last resource, the ulnar may also be tied. If bleeding still recur, do not amputate, but cut carefully down to the metacarpal bone, and if it cannot be suppressed, remove the bone and finger to give more room, and let amputation be your last resource.

Treat wounds of the foot on the same principles.

Hand or foot.—Dilatation of the external wound, and ligature above and below. If not practicable, then use compression on the principal trunk, and a graduated compress and bandage on the wound.

*Aneurismal Varix, or Varicose Aneurism.*—When obliged to perform the operation, either from great increase of swelling or anxiety of the patient, cut freely down to the artery, and place upon it a ligature above and one below.

*Tying of Arteries.*—1. Where the *axillary* artery is injured below the giving off the subscapular and p. circumflex, branches, place a ligature below, but not immediately below, the latter branch. Where it occurs from a sloughing state of stump, tie the artery in the first instance, and if that prove unsuccessful, amputate. 2. If from *femoral*, judge well the part from which the bleeding comes; mark the shortest distance from the face of the stump at which compression arrests the hæmorrhage, and there apply the ligature, but if it be just above the a. profunda, amputate, if the strength of the patient will admit. 3. If *after amputation at the shoulder joint*, cut down through the great pectoral muscle, and place the ligature anywhere below the clavicle. The same principles are alike applicable where danger arises by oozing from the surface of the stump, not capable of being suppressed by pressure. 4. Where a small vessel (the branch of a much larger) bleeds, take up the branch, and not the trunk, if possible. 5. Where the bleeding artery can be seen at the bottom of the wound, cut down upon it, and place a ligature around it, both above and below the artery. 6. Hesitate before tying the *external iliac* for wounds of the femoral; and keep in view the general principle of tying arteries as near as possible to the bleeding points. If bleeding recur, the operation must then be boldly executed, even if the iliac artery had been previously tied. 7. The operation of applying a ligature upon the *axillary* artery itself, at the part injured (in all cases of wounds, and in all cases of recent circumscribed or diffused aneurismal swellings, the consequence of wounds), is the substitute which ought in all cases to supersede that of ligature upon the *subclavian*. 8. If the *femoral* artery be divided by a fracture of the femur, operation will generally be required, and always so if the fracture be a comminuted one. If puncture made by such fracture give rise to aneurism, treat first the fracture and then the aneurism.

If consequent mortification proceeds unchecked, and there be much constitutional disturbance, arrest it first, and let the line of separation be well observed. Where there is much weakness or irritability of constitution, defer the operation, particularly if there be hope of the patient becoming stronger and more tranquil. If mortification has once stopped, and again begins to spread, amputation will give a chance of life. 9. Never apply the tourniquet for aneurism, or wounded artery, but compress it with the hand. 10. To promote collateral circulation after a large artery has been tied, rub the part below gently with the hands for several hours, or for three or four days, relaxing during sleep. 11. If the external wound, which has reached the artery, has healed for weeks or months, give rise to a diffused or circumscribed aneurism, treat it as an aneurism occurring from an internal cause, with this difference, that as the artery is sound, the operation may be performed close to the tumor. (Mr. Guthrie, p. 159—162.)

ANEURISM.—On this subject we notice the accidental discovery, by a patient of Dr. Harrison, of the application of a number of clamps (such as used by joiners and cabinet-makers, to secure their glued wood-work), along the course of the artery, proving it not to be necessary completely to arrest the pulsation in the tumor; but by causing a lessened current of blood through it, produce coagulation and a contraction of the sac. (Mr. Wilde, p. 172.)

Dr. Bellingham applies two compressing instruments upon separate parts of the limb, one tightened, the other not; and by thus alternating the pressure, producing the same effect as if constant compression were maintained

at one point, the patient being enabled to bear it for a much longer period than other instruments. (p. 172.)

*Ligature of Arteries, without dividing the Middle and Internal Coats.*—Chelius considers it unnecessary to draw the ligature so tight as is commonly recommended, but only so much so, that the whole of the internal coat be brought in close contact, and that the ligature should indent the external coat of the vessel. (Chelius, p. 167.)

*Torsion of Arteries, effects of.*—Torsion, by producing obliteration of the vessel, either by coagulation and simultaneous assimilation of all the three coats at the spot, or by the slow and insensible contraction, as by ligature, converts the arterial tube into an impervious cord. It is adapted to small arteries of the fourth or fifth order, radial, ulnar, tibial, intercostal, cervical, thoracic, external pudic, spermatic, digitals. Seize them with forceps, close the instrument and twist in the fingers, three, four, or six times in the same direction, and then abandon them, or return to the operation if not sufficiently twisted. Care must be taken to seize the whole calibre of the vessel; to take sufficient hold; not to include the surrounding textures; and so to twist them that the proper coats are ruptured, but not so much that the cellular coat is also broken. Its advantages are simplicity and celerity, no assistance being necessary, and its not leaving foreign bodies in the wound. (Dr. Porta, p. 177.)

*Galvano-puncture in Aneurism.*—The galvanic current should be directly transmitted through the blood itself by two opposing points. Employ fine steel needles, three inches long, and as they burn or cauterize the skin, or lose their electricity, coat them, before application, with gum lac or cutler's varnish. The extremities of the needles should cross each other in the tumor, and when the latter is of large size, multiply the points, so that the nuclei of coagulation may pass into one common clot. They should pass into the tumor obliquely or perpendicularly, opposed to the current of blood. The application of the galvanic current may be made each time ten or twelve minutes; by this time the tumor will feel hard, and the pulsation cease: after this, apply compression, or a bladder of ice, to complete the cure. It is suggested for the cure also of varix, erectile and sanguineous tumors, &c. (M. Petrequin, p. 182.)

Mr. Hamilton has tried it in a case of carotid aneurism. He passed fine gold needles coated with shell lac, an inch long, through the inner and outer sides of the tumor, and made them to touch in the centre; then used Smee's battery, with twelve pairs of plates, gradually applied. After fifteen minutes, pulsation became less, the tumor firmer, and, at the end of twenty minutes complete coagulation was evident, as the tumor was solid and the pulsation was imperceptible. (Hamilton, p. 184.)

*Simple Puncture without Electricity.*—By simply passing needles through the tumor (transfixing) and leaving them in twenty-four hours. With one needle a fibrinous coagulum was formed, attached to the side of the artery, which Dr. Namais thinks would have changed into a solid cord, and filled the interior of the vessel, if the animal (a horse) had lived long enough. He thinks the needle caused a slower motion of the blood at the part where the needle passed through the tumor, and collected around it the deposit of fibrine. Its facility and simplicity are its recommendations over the application of galvano-puncture, &c. (Dr. Giacinto Namais, p. 186.)

*Ligature of Left Subclavian within the Scalenus Muscle.*—Lay the patient on a low bed, with the head and shoulders raised, and the face turned to the right side. Make an incision three and a half inches long, on the inner edge of the mastoid muscle, terminating at the sternum, and dividing the integuments and platysma myoids.

Make a second incision from the last, horizontally, towards the sternal extremity of the clavicle, two and a half inches long. Dissect the flap of integuments and platysma upwards and inwards, so as to lay bare the sterno-mastoid. Pass a director under this muscle, and divide the sternal and

half the clavicular attachments with a bistoury. Turn these portions up, so as to show the sterno-hyoid and sterno-thyroid muscles, and the jugular vein beneath the fascia; also a portion (in this case) of the aneurismal sac, strongly pulsating. Divide the fascia with the handle of the scalpel and fingers, and pass down the inner side of scalenus anticus, carefully avoiding the internal jugular vein, thoracic duct, and phrenic nerve, until the finger reaches the artery and recognises well its pulsation. Detach the artery very deliberately, so as to avoid wounding the thoracic duct and pleura, and pass the aneurismal needle (in this case, Sir Philip Crampton's) under it, with the point and ligature upwards. Catch and secure the ligature (tying it securely with the point of the fore-finger, in the bottom of the wound), and, to be satisfied that the artery is secured, take care to examine the distal part of it for the cessation of all pulsation. (Dr. Rodgers, p. 187.)

*Aneurism by Anastomosis on the Forehead.—Treatment by numerous Operations.*—1. Ligatures placed upon the temporo-frontal and two temporo-parietal arteries of the right side, and upon the temporal artery in the frontal region and the temporo-parietal of the left; these made by needles passed under the arteries and compressed by a thread wound like 8. 2. Destruction of morbid structure by caustics. 3. Excision; and 4. Compression. (Dr. Warren, p. 167.)

NÆVUS MATERNUS.—Extending over one side of the face, as far as the eye, to the lower lip and chin, and downwards upon the neck to a little below the clavicle. Application of a ligature, 1st. To the left external carotid: 2nd. A ligature on the right carotid, a month after the first: 3rd. Breaking up the structure of the lip affected, with a cataract needle: 4th. The removal of a V shaped solid portion of the lip, two inches long. (Dr. Warren, p. 167.)

*Treatment by Caustic.*—Introduce a narrow knife, one-eighth of an inch wide, into the middle of the nævus, and move it in different directions, so as to disintegrate its vascular structure. Then apply a small caustic, or a probe armed with it (by being dipped into the nitrate, melted in a platina or silver spoon), into the puncture made with the narrow knife, and move it about, so that wherever the knife has divided the blood-vessels, the caustic may freely penetrate. Extend the operation, if not effectually done by the first application. (Sir B. Brodie, p. 189.)

*Internal Jugular, Wounds of.*—May be tied by passing a tenaculum through the cut edges, and drawing them together without destroying the continuity of the vessel.

*Partial Division of the Coats of an Artery.*—Place a ligature both above and below the division, and do not trust to the vis medicatrix.

*Wounds of the Throat with Hæmorrhage.*—First, if necessary, tie the external, and if it should not cease, and the wound be not in the internal carotid, then tie the common carotid.

MOLES.—Wash with soap and water, and rub until the blood fills the delicate branches of the erectile tissue. Make the skin tight, and then cover with a paint made of stiff white lead and carmine, and, having transpierced a cork with three needles, so that their points project sufficiently, puncture the surface and texture of the mole. (Chelius, p. 190.)

VARICOSE VEINS.—Having marked the veins to be cured with ink, apply a small caustic, of five parts quick lime, and four parts potassa, mixed up with spts. wine (Vienna paste) over each projecting vein. When in the horizontal position, insulate each place of application of the caustic with a circle of plaster three or four thicknesses, the internal space being not more than one-quarter or one-third of an inch in diameter. Remove the caustic in half an hour, and dress in the usual way, applying a bandage. From six to twelve applied at one time will be sufficient. (Mr. Skey, p. 190.)

HÆMORRHAGE *from the nose.*—Introduce the little finger into the nostril, and press upon its floor until the bleeding stops; then take a dossil of lint, and roll it upon powdered alum, and press it upon the floor of the nostril with the little finger. Introduce pieces of lint, in this way, until the roof of the nostril supplies the pressure of the finger. (Dr. Oke, p. 192.)

*Hæmorrhage from Leech Bites.*—Wipe the orifice with a bit of lint or fine linen, and when nearly dry, seize a small portion of integument around the bite with the thumb and finger, and make moderate pressure, until the hæmorrhage is completely suppressed, which will be from five to fifteen minutes. (Dr. Marshall, p. 193.)

Or, take a small pinch of down from a beaver hat and pile it upon the orifice; then put over the down a piece of thin muslin, and draw it tightly. If blood oozes through both, dry it, until the hæmorrhage ceases, and in a short time the down and muslin will have become matted with coagulum. All superfluous down may be cut off, and in two days the orifice will have healed, and the matted matter will fall off. (Dr. Houston, p. 194.)

Or, apply a piece of lint dipped in a strong solution of alum, or apply to the place, tobacco, such as is used for smoking. (Mr. Gervis, p. 194.)

VENESECTION FROM THE FOOT.—Immerse the foot in hot water to swell the veins. Put on a bandage an inch above the ankle. In puncturing either of the veins before the malleoli, be careful not to touch the bone with the point of the lancet. If the vein bleed in a stream, catch the blood in a vessel; but if it only dribble, the foot should be put into the hot water, and judge of quantity by the colour. (M. Malgaigne, p. 193.)

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### AFFECTIONS OF THE RESPIRATORY SYSTEM.

CROUP.—In croup, scarlatina maligna, &c., where great prostration exists, the stomach seems insensible to ordinary emetics, which only purge, and increase the prostration. In such cases, try the turpeth mineral (subsulphate of mercury). To a child, twelve years old, give five grains every fifteen minutes, accompanied with mustard whey, till vomiting is produced. The second dose will generally be sufficient. It vomits for an hour or two without causing purging, or subsequent prostration. It may be repeated twice or thrice in twenty-four hours. (Dr. Hubbard, p. 134).

Antiphlogistic treatment is sometimes useless, if not hurtful. Emetics useful by acting mechanically? Mercury may be given early. Local applications may comprise dilute muriatic acid, alum, and nitrate of silver, the two latter used in the solid or liquid state. In using caustics be careful to hold the child's head steady, and have the caustic firmly fixed, and not far projecting from the port-caustique. Or, it may be used by means of a piece of sponge fastened to the end of a piece of whalebone, like the sponge probang, bent to an obtuse angle, or curved; care being taken to cleanse the surface well. This may be done three or four times a-day. Tracheotomy is the last resource. This treatment, however, is more applicable to *diphtherite* than to croup. In diphtherite the false membrane often forms first on the fauces and back of the mouth, and may be arrested by the above applications. (M. Guersent, p. 75.)

BRONCHITIS, &c.—Use the turpeth mineral (subsulphate of mercury), in five-grain doses, every quarter or half hour, till it causes vomiting, instead of tartar emetic, in those cases where we fear the prostrating effects of the antimony.—(See Croup.) (Dr. Hubbard, p. 134.)

PNEUMONIA.—The treatment consists of 1st. Subduing inflammatory action by moderate bleeding (sixteen to twenty ounces), at the beginning of the attack, followed by three or four grs. of calomel and one gr. opium, and if crepitant râle persist, repeat the bleeding, and give tartar emetic in

full doses, viz., one or one and a half grains every three or four hours, making the interval afterwards six or eight hours. Give the bitter almond emulsion as a sedative, or hydrocyanic acid. 2d. Preventing deposition by exciting the capillaries, by giving hyd. c. creta, gr. iv. vel v., or calomel, gr. j. in each interval of the antimonial, so as to produce a fair constitutional impression short of ptyalism. Blister with caution. 3d. Guard against relapse on well-known principles. (Dr. A. T. Thomson, p. 71.)

HOOPING-COUGH—Purgation with calomel; if febrile symptoms, calomel and antimony; an occasional emetic, and small and repeated doses of carbonate of potassa, or the following formula:. Potassæ carb. ℥j.; coccus cacti, gr. x; aq. fervent. q. s. The dose according to age; for an infant, a teaspoonful thrice daily. (Dr. Allnatt, p. 74.)

Dr. Wachtl, of Vienna, recommends the ammoniated tincture of cochineal. (p. 74.)

In the first stage, mild antiphlogistics, daily emetics, and strict confinement to the house, except in summer months. In the latter stages give the following:—Tincture of cantharides, tinct. of opium. comp. aa. ℥ss.; tinct. cinch. co. ℥vss. A teaspoonful to be taken three times a-day in a little boiling water; the dose to be increased if no strangury is produced. Be careful, however, at all times, not to give opium if it can be avoided. (Drs. Graves and M'Gregor, p. 74.)

PHTHISIS.—Subjects of phthisis expire a much less quantity of air than when healthy, and it may be possible by the spirometer to distinguish phthisis at a much earlier period than by any other means. (Mr. Hutchinson, p. 69.)

ASTHMA, *Spasmodic.*—Take a piece of blotting-paper; dip it in a saturated solution of the nitrate of potash, and dry; place the dried paper on a common plate, and ignite, allowing the fumes to be diffused in the room of the patient. (p. 73.)

APHONIA, *Chronic.*—Emetics, aperients, mercurials, iodide of potassium, cinchona, and acidulated astringent gargles were given five months unsuccessfully, and it was afterwards cured in three weeks by the inhalation of iodine from a Woulff's bottle for fifteen minutes twice a-day, and a sulphate of quinine mixture. (Mr. Monks, p. 132.)

ASPHYXIA, *by Strangulation.—Immediate Treatment.*—The ligature having been removed, watch, and, if natural respiration continue, do not interfere. If respiration has ceased, use artificial assistance immediately. When normal respiration is established, desist.

If coma remain, or respiration again cease, commence again; secure a pair of bellows (if scientific means are not at hand), or a tube of any kind (a roll of paper or elastic catheter), which insert into the nostrils, and with your own lungs a fair substitute will be made;—but, 1st, Avoid undue force in inflation; 2d. Inflate at regular intervals, imitating natural respiration; 3d. Warming or oxygenating the air are unnecessary; 4th. Expose the chest to the full play of the lungs; 5th. Do not open the trachea, unless the larynx be obstructed; 6th. Close the useless nostril and mouth; 7th. Press the larynx against the vertebræ to prevent inflating the stomach; Electricity and galvanism are unnecessary.

*After Treatment.*—If congestion supervene from reaction, abstract blood cautiously, and keep the patient in a moderately warm temperature. (Sir B. Brodie, p. 77.)

THROAT, *Wounds of.*—In those where the skin, superficial muscles, and vessels are divided, use sutures cautiously, and observe a relaxed position of the parts.

When an opening is made either into the fauces, pharynx, larynx, trachea, or œsophagus, inquire as to the extent of hæmorrhage, secure every danger-

ously bleeding artery; remove all loose fragments; keep the wound free, the head raised; avoid all irritation, eating, speaking, and especially sutures, or mental excitement; use an elastic tube introduced into the nostril, or through the glottis (when there is œdematous state of the mucous membrane) when necessary; keep the apartment well ventilated; use the simplest dressings, as water or poultice, and if there be much discharge, a piece of soft sponge to absorb it.

If inflammation or constitutional fever supervene, use local or general bleeding, antimony, mercurial purgatives, &c.

Violent dyspnœa in consequence of excrescences or granulations in the glottis or air-passages, may be overcome by tracheotomy. (Mr. Mc'Whinnie, p. 194.)

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### AFFECTIONS OF THE ALIMENTARY CANAL.

GLOSSITIS.—Use purgatives of calomel and jalap; leeches, and a blister to the throat, and nitrate of silver, gr. 20, aq. dist. ℥j., to be applied with a camels-hair brush three or four times a-day. (Dr. England, p. 196.)

APHTHÆ.—Take of honey, fifteen parts, diluted sulphuric acid, one part, by weight; brush the ulcerated surface with a camel-hair pencil dipped in this liniment; repeat it occasionally. (Prof. Lippich, p. 90.)

PERITONITIS.—Do not force the peristaltic action of the intestines by violent purgatives, and chiefly subdue the inflammatory action which is the cause of constipation, by leeches, blisters, and mercury. Where you have reason to think accumulations of fœcal matter are present, introduce Dr. O'Beirne's intestinal tube once or twice, but it is worse than useless to force the discharge of the contents of the intestines. (Dr. Corrigan, p. 90.)

STOMACH, *Affections of*.—In irritability of the stomach, with the deposit of earthy phosphates, arising from derangement of the functions of the spinal cord, and evinced by emaciated countenance, burning, gnawing pain in scrob. cordis, and heavy pain across the loins, tongue clean and red, pulse quick and sharp, skin dry and imperspirable, with vomiting after meals; try strychnia, as in the following formula:—Strychnia gr. j., acidi nitrici dil. ℥i., aquæ ℥xij., solve, at sumat æger, fiat ℥j. ter in die, and rub the scrob. with a liniment of Croton oil; milk dietary, consisting of eighteen ounces of bread, one ounce of butter, and two pints of milk daily. The medicine to be taken fifteen minutes after each meal. The strychnia acts particularly on the spinal marrow; and it is supposed that when alkaline urine is secreted, independently of the character of the ingesta, there is always some lesion of this part. (Dr. Bird, p. 98.)

Unfermented bread is said to be useful where there is habitual headache, acidity of stomach, flatulence, eructations, sinking at the pit of the stomach, and pain after meals; in fact, in confirmed indigestion, and to all who are subject to gout and gravel. (p. 138.)

CHOLERA (*Asiatic*).—Three objects are to be observed in its treatment, viz., 1. To moderate the morbid action established for expelling the poison, by replenishing the fluids. Give the patient a fluid for drink, consisting, as nearly as possible, of similar elements to the serum, as albumen, muriate of soda, and carbonate of soda in a very dilute state; give also effervescing salines. 2. To prevent local engorgements, particularly of the liver and vena portæ. Remove a quantity of blood proportionable to the exigency of the case, and the organ congested. 3. To promote healthy secretion, and allay pain, irritation, and spasm.. Give calomel and Dover's powder freely, until the vomiting and purging are restrained. (Mr. Clark, p. 83.)

Take thirty grains of sesqui-carbonate of soda or bicarbonate of potash,

put it into a tumbler glass, and add a wine glass of water and a little syrup. Then dissolve twenty grains of tartaric or citric acid in half a wine glass of water, and let the patient drink it off immediately. Lemon juice may be substituted for the citric acid. The carbonic acid is said to act as an antidote to the poison in the system. (Dr. Parkin, p. 84.)

Loss of power in the heart is said to be one important lesion in cholera, and nature therefore endeavors to remedy the disease in four ways; which we ought to study, viz., 1. Vigorous muscular pressure—by cramps—which propel the tarry blood towards the heart. 2. The absorption of the water restores the blood to its natural or liquid condition. 3. Nausea, by causing general relaxation of the system, diminishes the obstruction to the passage of blood in the vessels. 4. Retching, or vomiting, assists mechanically in driving forward the blood in the distant congested vessels. (Mr. French, p. 85.)

First give calomel, rhubarb, aloes, aa. gr. x. ft. bolus; then liq. ammon. ℳ xv., and repeat in half hour doses if rejected. Effervescing draughts, soda water, liq. ammoniæ externally over the chest, abdomen, and upper and lower extremities as a rubefacient, vinegar and water to the head.—*Convalescent Treatment.*—A laxative after the second or third day, and tonics for a week afterwards. Use opium cautiously. For the spasms or cramps, stretch the lower extremities, taking hold of heel and toes, and bend the toes and foot towards the patient as he lies, gently and repeatedly, Use also shampooing. (Ollapod, of Madras, p. 86.)

DIARRHŒA.—Try acetate of lead for obstinate and peculiar diarrhœa, accompanying uterine phlebitis and peritonitis. This medicine seems to act by checking the peristaltic action of the intestines, and allaying pain by blunting the sensibility of the mucous membrane. (Dr. Smyth, p. 86.)

DYSENTERY.—Battley's solution of secale, one drachm; tinct. of muriate of iron, one drachm; water, six ounces. Mix, and give a quarter part every four hours. (Mr. Gervis, p. 87.)

HERNIA.—New mode of applying the taxis, viz., drawing back the protrusion into the cavity, instead of pushing it back. Flex the thighs on the pelvis, also the loins, &c., so that the body may be coiled up. Seize with one hand the hernial tumor at its base, and compress slightly, and with the other hand bring the abdominal parietes as much towards the inguinal aperture as practicable, and by a simultaneous movement of both hands, produce traction on the hernial contents.

This plan is to imitate the practice in olden time, which was to place the patient's head downwards, and by the position of the intestines, shaking him up and down, to induce the viscera to gravitate back into the abdomen; and it often succeeded after the failure of all other means. (M. Grynfeltt, p. 197.)

STRANGULATED.—(*Early operation in*)—Try the following plan of treatment;—1. Pressure for a short time is indispensable. 2. Bleeding under cautious restrictions is advisable. 3. The warm bath may be used in mild cases, but in bad strangulations they are worse than useless. 4. Cold may be tolerated in the early stage, but if too long used, or used too cold, may produce gangrene. 5. Tobacco is uncertain and dangerous; useless if weak, and dangerous if strong. 6. Opium in full doses is useful, causing muscular relaxation. 7. Purgatives are pernicious. 8. Belladonna, trifling with the life of the patient.

SUMMARY.—In bad strangulation, where pain, tenderness, and firmness of the tumor are great, and where there is much constitutional disturbance, after cautious use of the taxis—1st, Bleed to faintness, and when the necessary relaxation is produced, 2nd, further attempts, very cautiously used, may be employed to effect reduction, but by no means exhaust too long the time and strength of the patient by the other accessory means mentioned

above, but at once, 3d, proceed to the operation. Of the utility and practicability of dividing the stricture without opening the hernial sac, there can be no doubt when the cases are cautiously chosen; and, it may be generally attempted, except where gangrene is fairly suspected, when the sac must be opened to allow the gangrenous parts to separate; or when the stricture is in the neck of the sac itself, whether at the upper or lower rings, which is not very frequent. (Dr. Warren, 201.)

HÆMORRHOIDS.—*(Operation by cautery.)*—The tumors may be brought down as usual, opened throughout their whole length, and the filhos caustic, i. e., potassa c. calce, well rubbed in, so as to destroy the structure. Afterwards give injections to remove loose particles of caustic, and use a hip-bath afterwards. (M. Amussat, p. 204.)

ANUS.—*Fissures of with a Condyloma.*—This was a most satisfactory and efficient cure of a most troublesome affection by nitrate of silver. A daily application was made of the solid nitrate, from the 29th of May, to the 19th of June, when the case was cured of both the fissures and the condyloma. (Dr. Hargrave, p. 205.)

FISSURE OF THE ANUS IN CHILDREN.—Give an enema daily for six or eight days, composed of extract of rhatany, one scruple; and water, three ounces. (Trousseau, p. 206.)

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## AFFECTIONS OF THE URINARY ORGANS.

KIDNEYS.—*Treatment of Diabetes.—Glucosuria.—Diet.* Strictly forbid all farinaceous substances, as those into which starch in any way enters. Gluten bread is of great value; it satisfies the cravings of the appetite. Animal food, with eggs, milk, butter, and cheese, are proper. Also the following vegetables; Spinage, endive, lettuce, sorrell, asparagus, haricots verts, cabbage of all kinds, along with fat pork or salt bacon; cresses with oil, and hard-boiled eggs. Fresh gluten, with butter, and cheese grated upon it, is an excellent dish. For dessert, allow olives, almonds, filberts, and walnuts; occasionally, and in small quantities, allow apples, pears, cherries, currants, gooseberries, strawberries, raisins, and pine-apples. *Drinks:* The French wines, Bourgogne and Bourdeaux, about a pint in the twenty-four hours; they are astringent; sometimes the quantity is to be increased, but the least approach to inebriety is injurious. N. B. Some patients are made worse with wine. Beer is injurious. Coffee is good, and should be taken without sugar, or the quantity of sugar should be very small. Lemonade and drinks of this class are injurious. *Clothing:* Protect the body from sudden chills, by clothing it in flannel. *Exercise* should be carefully regulated; the patient should engage in those exercises in which he takes pleasure; but fatigue is to be avoided. Baths are not of much use; occasionally a tepid bath may do good; swimming in the sea has been found very useful.

*Medical Treatment.*—Carbonate of ammonia, 77 grains; rum, 310; water 1550 grains. One third to be taken half an hour before each meal; or give it as a bolus (eight grains), with treacle, from two to ten to be given every night.

Give Vichy water. The alkaline bicarbonates, particularly soda, are very useful.

*Dover's Powder and Opiates.*—The former is very useful; ten grains at bedtime. Crude opium and morphia often disorder the stomach.

Theriaca divina, 3ss. to 3i., every night: a drachm contains one grain of opium.

*Chalybeates and Tonics.*—When there is decided pallor of skin, resembling

chlorosis, give tonic bitters with iron. The pulverised iron, or iron reduced by hydrogen, is the best form of chalybeate.

*Evacuants.*—Commence the treatment by giving an emetic and afterwards a purgative, to clear away anything injurious in the primæ viæ. Evacuants are of no use afterwards, except to combat certain symptoms.

Lime water, calcined magnesia, alkalies, nitric, phosphoric, and sulphuric acids, alum, tannin, and other astringents, are of little if any use.

*Bleeding.*—General bleeding is always injurious. Leeches or cupping to different parts, as the stomach or anus (as symptoms indicate), will be found useful, viz., where there is epigastric tenderness or suppressed hæmorrhoids.

The *chief reliance* must be placed on dietic and hygienic means. (M. Bouchardat, p. 103.)

HÆMATURIA.—If the patient be young, vigorous, and plethoric (not otherwise), general bloodletting. If the kidneys are affected, cup over the loins; if the bladder is painful, apply leeches to the groins or perineum. In renal cases, dependent on subacute inflammation, use counter irritation, by means of antimonial ointment. Do not apply blisters. If the pain seems to arise from the presence of calculi in the kidney, apply morphine ointment, or apply a belladonna plaster to the loins. When the circulation is increased, and there is no sickness, give tartar emetic. If there is sickness give digitalis. In order to restrain the hæmorrhage, give acetate of lead and opium, or sulphate of alum with hyoscyamus. If the pain is decidedly connected with the bladder, use anodyne suppositories. Ergot of rye is very efficacious in stopping the hæmorrhage, and it produces no unpleasant effects; give it in doses of from ten to fifteen grains, with a little carbonate of soda or potash, and at intervals of from four to six hours. Should it disorder the stomach, add a few grains of ginger or comp. cinnamon powder. Any of the mineral acids may be given according to the individual case. In chronic cases, give copaiba and turpentine; also pareira brava, and uva ursi; and improve the general health with iron and iodide of potassium. Cold should be applied, and cold water injections used as auxiliaries to restrain the hæmorrhage. (Dr. Fife, p. 88.)

*Alkaline Urine.*—Use strychnia when the affection follows injury or lesion of the spine, as recommended by Dr. Golding Bird. (p. 99.)

*Nephritis.*—Give copaiba in ten drop doses, three times a-day, in cases of nephritis with suppression of urine, after bleeding and the ordinary treatment have failed. (Mr. Roberts, p. 73.)

BLADDER.—*Lithotrity.*—This operation is applicable, 1st, to patients above puberty, if the stone is not large, say ½ to ¾ inch in diameter, or as large as a chestnut; 2nd, when the bladder and urethra are tolerably healthy, as shown by retaining the urine for hours, and being able to pass it in a good stream, and when the bladder will admit of injection and careful exploration. (Liston, p. 207.)

Dr. Arthault's new instrument is capable of crushing and pulverizing, in three minutes, a calculus of the size of a pigeon's egg. (Gaz. Med. Chir., p. 209.

*Lithotomy.*—1. Use the simplest instruments. 2. Interfere as little as possible with the ileo-vesical fascia. 3. Know well the exact position of the stone, for the use of the forceps is the most annoying part of the operation. 4. Dilate internally, if necessary, for a large stone; or make a bilateral incision, but it is very seldom necessary. 5. Introduce a gum-elastic tube through the track of the wound into the bladder, to secure the flow of urine from it, and keep it there, in children 20 hours, in adults 40 or 50.—(Mr. Liston, p. 207.)

In performing the operation of lithotomy in the female introduce a deeply-grooved straight director into the bladder; then pass a straight probe-pointed bistoury along it, and make an incision, about half an inch in extent, towards the tuberosity of the ischium, the wound being limited to

the anterior half of the urethra. Next, make a slight nick in the (?) side of the orifice of the urethra, and withdraw the director; then gradually introduce the point of the left forefinger into the wound, and carefully dilate the posterior half of the urethra; finally, seize the stone with a small lithotomy forceps. Mr. Fergusson thinks that the incision in the anterior part of the urethra produces less injury than dilatation. (Mr. Fergusson, p. 209.)

Dr. Baker, of New-York, on the other hand, divides the urethra half an inch posterior to the meatus urinarius, leaving this orifice and the anterior portion of the urethra undivided. (Dr. Baker, p. 210.)

URETHRA.—*Stricture.*—M. Civiale uses the flexible sound, carrying a port-caustique within, but projecting an inch beyond the latter. The length of the opposite end is about eight inches. The smallest port-caustiques are three-quarters of a line in diameter, and are flexible. The conductors are elastic gum, straight or curved, according to the situation of the stricture; they are seven inches long, and from two to three lines diameter, having a graduated scale attached. The anterior opening is proportioned to the size of the port-caustique, which fits without being tight. Care is necessary that the extremity of the port-caustique is completely introduced into the constricted part at the moment when it protrudes from the conductor; this will be obtained by gentle traction on the penis.

When the stricture is much contracted, so as to admit only a very delicate bougie, renounce the caustic, or apply it from before backwards. Its application should be confined to linear contractions, capable of admitting the port-caustique, and an exact impression of the contraction. When the melioration is not progressive, discontinue the use of the caustic, and resort to other means. (Dr. Civiale, p. 217.)

*Urethral Fistula.*—When from healthy abscess, to be treated by encouraging granulations, assisted by permanent catheters.

When from specific abscess and stricture, to be treated by simple incision into the urethra through the perineum, to divert the urine for a few days before performing the operation, and when this is healed, by using permanent catheters. (Segalas and Ricord, p. 220.)

*Perineal Fistula.*—If the application of caustic or the actual cautery fail to keep the orifice raw, so that the granulations cannot close it, a taliacotian operation should be tried, as modified by Dieffenbach, which consists in not turning the flap round or bringing the edges together, but of separating two little lateral flaps from the penis, at the sides of the fistulous opening.

If calculi are passing through the urethra, and lodge in front of the scrotum, endeavour to draw them forwards to the orifice, which, by a little enlargement, will allow them to come out. If not able to be brought forwards, try to pass them back, so as to cut on them in the perineum behind the scrotum. (Mr. Hawkins, p. 219.)

*Urine, Extravasation of.*—Cut down upon the part, lay open the urethra, and allow the pus and urine to escape; then apply warm poultices to favour the separation of the sloughs. Support the scrotum, should it be implicated, and afterwards use astringent lotions. During the attendant fever, relieve the bowels with an enema, and give Dover's powder; and, when low symptoms come on, give stimulants (brandy) and opium. (Mr. Quain, p. 221.)

*Hæmorrhage from Urethra.*—Hæmorrhage from the urethra, as well as other cases of hæmorrhage, may be treated by solution of secale. Battley's solution of secale, ℥j.; tinct. of sesquichlor. of iron, ℥j.; water, ℥vj. Mix, and give a quarter part every four hours. (Mr. Gervis, p. 87.)

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## AFFECTIONS OF THE ORGANS OF GENERATION.

SYPHILIS.—*Chancre.*—If seen within three days, apply nitrate of silver freely, and secondary symptoms need not be feared, and even after this

time, in nine cases out of ten, the same results will take place. There are some indications, however, against the use of caustic, and these are inflammation, or great irritation of the part; but, perhaps, the most important indication, against its use, is induration of the sore; the constitution is sure to be affected when this occurs, and mercury *must* be given. (Mr. Acton, p. 222.)

*Secondary Syphilis.—Pains in the Long Bones, &c.*—Give hydriodate of potash, five to eight, or to fifteen grains three times a day, and, if not successful in a few days, then mercury may be had recourse to. Where the secondary symptoms are scaly eruption, excavated ulcer of the tonsil, swelling of the testicle, excavated ulcer of the tongue, acute ulcers of the edges of the eyelids, iritis, purulent discharge of the meatus auditorius externus, papular eruption without fever, desquamating tubercular and pustular eruption, secondary ulcers, fissured tongue, ulceration round the nail, phagedenic ulcers of the skin, and foul sloughy ulcerations of the pharynx, they will be benefitted by mercurial fumigations. (Mr. Ormerod, p. 227.)

M. Ricord often substitutes the bromide for the iodide of potassium. The dose is the same, and it has produced the same therapeutic effects, but more slowly. It is much cheaper. (p. 229.)

*Syphilitic Testicle.*—Combine the mercurial treatment with iodide of potassium. Give three quarters of a grain of iodide of mercury in a pill every night, and one or two grains of iodide of potassium twice or thrice during the day. Continue this treatment for some time after a cure is effected. When effusion into the tunica vaginalis occurs, the fluid is generally absorbed; occasionally, however, it remains, and it is necessary to tap and inject the sac; before doing this we should endeavor to procure its absorption, by mercurial frictions on the scrotum, or the application of bego plaster with mercury. We should also try compression. (M. Helot, p. 229.)

GONORRHŒA.—Gonorrhœa has six regions as its seat in the urethra. 1. Balanic, or the portion within and just behind the glans penis. 2. Spongic, or the portion extending from the glans penis to the bulb. 3. Bulbic, or the portion situated about the bulb, and to the membranous portion. 4. Membranic, the whole membranous or muscular portion. 5. Prostatic, or the part involved by the prostate gland. 6. Cystic, when the specific poison affects the bladder.

Destroy its existence as quickly as possible, as there is no fear of stricture, if no phlegmonous inflammation. Take six to twelve copaiba capsules daily, or one to two oz. of cubebs. Use an injection of ten to fifteen grs. arg. nit. aq. distillat. ℥j. Do not mix copaiba and cubebs in one preparation, or give them together.

1. Where there is active inflammation, use active antiphlogistic measures, baths, and laxatives, and when subdued as above.

2. Where dysuria, apply leeches in perineo, cool lavements, general baths. If it continue very distressing, use an elastic catheter of moderate size.

3. Open abscesses as early as the matter is well formed.

4. Vesical tenesmus; inject per rectum aq. ℥iv., tinct. opii. 20 v. 30 drops.

5. In commencing gleet, inject ter die aq. dist. ℥vij. zinc. sulph. plumb. s. acet. aa., ℈j.

6. In chronic gleet, if no particular thickening or stricture, use wine, tannin, alum, or iodide of iron (aq. dist. ℥viii., iod. ferri gr. ij. ad. iv.) injections.

Injections with copaiba or cubebs are generally useless.

7. Epididymitis, or inflammation of epididymis, use a suspensory bandage. N. B. Be careful not to confound orchitis with epididymitis. (M. Ricord. p. 213.)

Enjoin rest and temperate habits. Use astringent injections, as nitrate of silver, quarter of a grain to the ounce, used only once in twenty-four

hours; or sulphate of zinc or alum, from ten to fifteen grains to the ounce. At the same time give the capsules of copaiba in large doses an hour after each meal; give a large dose (five or six) at bed-time. Direct the patient to void his urine every half hour or so, previous to which he should inject a small quantity of injection. (Mr. Brett, p. 215.)

Mr. M'Donald condemns solutions of nitrate of silver because of producing cystitis, and recommends it in ointment, a drachm to an ounce of lard, smeared on a bougie, and introduced three inches in the male, and retained three minutes. The penis afterwards to be bathed in warm water. (Mr. M'Donald, p. 215.)

Whenever gonorrhœa is followed by secondary symptoms, it is more than probable that there originally existed some syphilitic sore just within the orifice of the urethra, unobserved by the surgeon. (p. 228.)

*Ectrotic or Abortive Treatment.*—In the very early stage, before the suppurative crisis, inject a solution of nitrate of silver (grs. xii. to ℥i.) about two inches and a half down the urethra, by means of a glass syringe. Only use it once or twice, and if it fail in arresting the disease, then have recourse to ordinary treatment. (Dr. Arnott, p. 213.)

SCROTUM. *Hydrocele*—Treated successfully by alcohol, after the puncture had been made twice unsuccessfully. The scrotum was enveloped with a large compress, four times doubled, and steeped in alcohol of thirty degrees, and kept on by a suspensory bandage. This lotion was continued forty days. (M Pleindoux, p. 234.)

Discharge the fluid with a trocar or pocket lancet. Apply a warm vinegar poultice. When sufficient inflammation is superinduced by the poultice, apply poultices of bread and milk, and give a few smart doses of purgative medicine. (Dr. Harvey, p. 234.)

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## PARTURITION AND DISEASES OF WOMEN.

VULVA.—*Follicular Disease of.*—Arg. nit. and nitric acid are of no use. Hydrocyanic acid lotion is serviceable, or an ointment made of two drachms of prussic acid and a scruple of diacetate of lead, with two ounces of cocoa-nut oil. The parts are to be first washed with infusion of roses, and the ointment applied two or three times a day on lint.

Or try a lotion of lime water with opium; or make a poultice of bread, saturated with decoction of conium leaves, to a pint of which add two drachms of the liq. plumbi diacet.

When irritation is excessive, prescribe vapour-baths, either simple or medicated with sulphur. Attend to general health, order a nutritious but unstimulating diet; avoid wine and porter; give milk with lime water; keep the patient at rest; forbid sexual intercourse. There should be change of air. Give the vegetable tonics, as cascarilla, columba, cinchona, sarsaparilla, &c.; keep the bowels open with small doses of magnes. sulph. in infusion of cascarilla or camomile. When the symptoms are decidedly abating, give a mild mercurial course with sarsaparilla. (Mr. Oldham, p. 307.)

VAGINA AND URETHRA, *Disease of,*—The value of the speculum is incalculable in all cases where there is reason to suspect disease of the neck of the uterus.

*Local Treatment.*—In vulvular inflammation, the hip-bath and poppy fomentations. For the itching, nitrate of silver ℈j., aq. dist. ℥j., applied three or four times a-day; or tincture of matico. Both may be applied either with a camel's hair pencil or with a stick, to which a piece of sponge is tied. Lotions of the soluble salts of lead, zinc, mercury, narcotic preparations, borax, hydrocyanic acid, bread crumb soaked with liquor plumbi. et., gelatine and bran baths.

*General Treatment.*—Mild saline purgatives, rest, sea-bathing, alterative doses of mercury, as Plummer's pill, gr. v., nocte maneque. Brandishe's alkaline solution, twenty drops in an ounce of any bitter infusion; balsam copaiba. For pain in the back apply cautery to the sacrum. (Dr. Mitchell, p. 306.)

*Uterine Polypi and Ulceration.*—If small, remove them by twisting, with a forceps, consisting of a straight stem, eight inches long, having two short spring blades, with serrated tips, upon which slide a brace moveable from the handle, by which they are easily pressed firmly together, and made to grasp very securely any object caught between them. Apply nitrate of silver to restrain bleeding. Where it is necessary, in a larger pedunculated polypus, apply a ligature; Niessen's double canula is recommended, and with it, silk salmon fishing line soaked in linseed oil, which combines strength, perfect pliability, and softness, and is unaffected by moisture. N. B. In persons of a high habit, and who are subject to indulgences in dietary, be careful not suddenly to suppress menorrhagic discharges, because of the dangers of determination to cerebral congestion. (Dr. Montgomery, p. 301.)

UTERUS, *Ulcerative Inflammation of.*—Make very careful specular examination. Local treatment:—astringent vaginal injections, sulph. zinc, alum, tannin, acetate of lead, &c., repeated cauterization of the ulcerated surface with nitrate of silver, or acid nitrate of mercury. The use of the caustic is followed frequently by an increase in the local pains and leucorrhœa, which may become sanguinolent. The exacerbation may last a few days, but afterwards the patient becomes easier and better than before its application. General treatment:—continence, horizontal posture, and such other means as constitutional symptoms indicate. When there is debility, give tonics, &c. Leeches, scarifications, or cold hip-bath are unnecessary. External applications for pains in the loins are useless, but may be employed as a placebo. (Dr. Bennett, p. 287.)

*Irritability of Stomach in Pregnancy.*—Give strychnia in doses of from one-sixth to one-twelfth of a grain, in a little diluted nitric acid, three times a-day. (Dr. G. Bird, p. 98.)

*Vomiting of Pregnancy.*—M. Stackler gives three quarters of a grain daily, of the black oxide of mercury. No unpleasant effects follow. It is beneficial in hysterical convulsions and uterine irritation. [We suspect some mistake in the statement of the quantity given.—Ed.] (p. 279.)

HÆMORRHAGE *before Delivery.*—1. Accidental.—If the os uteri be dilated and the presentation natural, rupture the membranes, and leave the case to nature; but if the hæmorrhage do not cease, use ergot. If the os be not dilated, plug and wait.

2. In unavoidable, as placenta prævia.—If the os be dilated or dilatable, introduce the hand and turn the child, but if the placental covering of the os be only partial, treat as the first variety. (Dr. Mitchell, p. 280.)

*Uterine Hæmorrhage after Delivery.*—Mr. Higginbottom recommends giving an emetic dose of ipecacuanha, or ergot, in the exhaustion attending uterine hæmorrhage, after the delivery of the child or separation of the placenta. Of the ergot, Mr. H. gives 3ss. before the birth of the child, and a like dose after birth, and before the separation of the placenta. (p. 286.)

*Uterine Phlebitis and Peritonis.*—Give acetate of lead in the obstinate diarrhœa of uterine phlebitis and peritonitis. (Dr. Smith, p. 86.)

PUERPERAL FEVER.—Endeavour to throw off the morbific specific matter, and sustain the powers of life: give diaphoretics and stimulants according to the stage of the disease. Adopt every precaution against propagation; cease to attend midwifery at the same time with cases of malignant or severe erysipelas; observe rigid ablution of the hands, either with simple water, or chlorinated; change garments, or expose them to a

free atmosphere or high temperature, or absent yourself so as to obtain an entire purification, at the same time using warm baths and other alterative and purifying means. (Dr. Peddie, p. 43.)

OVARIAN DROPSY.—Puncture with a trocar through the vaginal parietes (the tumor being situate between the rectum and vagina), the canula being left thirty hours in the puncture to permit the fluid to drain off. In ten days it was dilated with a bistoury, and water injected into the sac; and to keep the opening pervious, a thick tube of tin was introduced and secured in front. In four weeks the puncture and cyst were contracted and the patient cured. Conditions necessary to success:—1. No complication, and the tumor unilocular. 2. That the cyst contain no more than fifteen lbs. of fluid. 3. That the opening be large enough to permit the easy introduction of the finger. 4. That the temperature of injected water be agreeable to the patient, and thrown deep into the sac. 5. That the tube be occasionally withdrawn, and not entirely disused, until the opening has contracted, and the discharge become solely purulent. (Prof. Kiwisch, p. 319.)

MENSTRUATION, *Irregular*.—Make use of cold water, as follows: commence first with the tepid and then with the cold bath, twice daily, for half an hour at a time. This process exerts a double influence on the female genital organs; the one a strengthening, and the other an attracting force. (Dr. Chmelik, p. 316.)

CHLOROSIS.—There are cases of chlorosis marked by an increase rather than a diminution of the total amount of blood; it is not a necessary condition, but it is more certainly and frequently a change in its quality. It is identical with anæmia.

When there is increase of blood, blood-letting, leeches, or cupping, are recommended.

When pain on pressure in some region of the spinal cord, cup or apply leeches, or repeated blisters on either side of the spine. Moderate pustulation; use anodynes sparingly and cautiously, and this may apply also to the use of aconite or cannabis Indica. The local application of these anodynes may be tried with much advantage, by means of soaked lint, either with or without the removal of the cuticle. Sulphate of veratrine ℈j. to ʒj. of axunge is very efficacious. Where the pains are very obstinate and severe, *firing* lightly applied may be tried.

Where there is great disturbance of the digestive functions, give warm cordial cathartics; one or two drops of creosote in pill thrice daily, alone, or with compound galbanum pill; finely powdered charcoal (of which that from boxwood is the best); or the following:—Fine charcoal, calcined magnesia, aa. gr. x., powdered nutmeg, five grs. Mix. This, mixed cautiously with, and taken in, milk and water, two or three times a-day.

The *essential* treatment, as it has special regard to the normal character of the red particles of the blood, must consist in the administration of iron (if no contra-indicating conditions). If idiosyncracy prove a constitution intolerant of iron, then make trial of bismuth, either alone, or in combination with carbonate of ammonia, and the salts of Peruvian bark. If iron can be tolerated, then the muriated tincture; the acetated tincture of Dr. Percival, of Dublin; vinum ferri; or Bewley's solution of the super-carbonate; mist. ferri. comp.; bark, iron, and ammonia; citrate of iron and quinine; compound ferri pil. with sulph. of quinine; and the saccharine proto-carbonate.

When a mild aperient is necessary during the use of iron, the following is recommended:—Sodæ bicarb. gr. xv.; acid tartaric, gr. x.; sulph. ferri, (siccat) gr. j. ad gr. v.; sacchari albi, ʒss. M. to be kept dry, dissolved in a wine-glassful of water, and swallowed whilst effervescing.

Dr. Freke recommends the hydro-sulphuret of ammonia to diminish the number of red corpuscles in the blood, on the supposition that it appropriates

a portion of that iron which would otherwise contribute to the formation of the red globules. (Sir H. Marsh, p. 310.)

Administer from eight to thirty grains daily, of tannate of iron, especially to persons of sanguine temperament. (M. Benedetti, p. 315.)

AMENORRHŒA, *Electricity and Galvanism in.*—To insure success, improve the general health by exercise and tonics, and remove accumulations from the bowels. Pass the shocks of the Leyden jar from the pubes to the sacrum, beginning about a week before the expected period of return, and repeat as often as will be thought necessary. (Dr. G. Bird, p. 315.)

℞ Dr. T. L. Ogier gives a teaspoonful of a strong tincture of water pepper, made from the leaves, stems, and flowers, three times a-day. (p. 316.)

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## AFFECTIONS OF JOINTS AND BONES.

DISLOCATIONS, *Hip Joint, Reduction of.*—1. Obtain two planks of oak, beech, or elm, eight feet long, three feet wide, and three inches thick, and joint these by joists. 2. Let these rest on chairs or tressels. 3. Drill holes in opposite directions, so that when the patient is placed upon the board, the ilia and unaffected thigh may be secured by two strong leather straps, thus rendering the pelvis fixed, and enabling the effective means, viz., extension and uplifting the head of the affected bone, to be used with the greatest advantage. In dislocation on the dorsum ilii, instead of the single pad above the knee, substitute two iron plates just above the condyles, one side being fast by a hinge-joint, and the other by two thumb-screws. 4. At the distal end of the board, fix an upright post, twenty inches high and three or four inches thick, and drill in it a hole for the pulley rope to pass; make another hole laterally in the post for a stick or windlass, which may be worked with cogs or a ratchet wheel. 5. Attach one of the pullies to a hook in the front plate (of which no description is given), and the other to a strong screw staple in the upright post. 6. All being now adjusted, extension may be made in the most gradual manner. Wherever it shall be required, the apparatus should be well wadded with any suitable soft material, to prevent abrasion of the skin and bruising of soft parts. [A simple diagram, with the apparatus applied upon a figure, would very much have forwarded the objects for which the paper is published.—Ed.] (Mr. Davis, p. 144.)

*Iodine Injections into the Joints.*—Consider well the situation of the opening, especially let it be at or near where fluctuation is most evident. Pinch up a fold of skin and pass in the hydrocele trocar at the base of this fold, so that when the operation is complete, the internal and external opening may not correspond, which prevents the ingress of air. An ordinary trocar may be used. (M. Velpeau uses a hydrocele trocar.) Draw off six or eight drachms of the fluid (M. Velpeau draws the whole off), or a quantity equal to the injection thrown in. Use undiluted tincture of iodine; the fluid left in the cavity dilutes it. (M. Velpeau dilutes the injection.) Allow the greater part of the fluid to remain in the joint. (M. Velpeau allows it all to escape.) N.B. M. Velpeau's practice appears to have been the most successful; it does not excite so much inflammation. (M. Bonnet, p. 147.)

BURSÆ, *Diseased.*—Make a free longitudinal incision from above downwards, throughout the whole extent of the bursa; inspect the cyst and detach any small adherent bodies where the cyst is thick and capacious, and bulges from the incision, remove an elliptical portion. Introduce an oiled dossil of lint as a dressing, and apply light compresses and a bandage. When suppuration is fairly established, apply poultices if necessary. The advantages of this method over puncture, subcutaneous incision, injection, seton, extirpation, &c., are—1. It is easily and quickly done. 2. It is less

painful. 3. It produces little or no constitutional disturbance. 4. It is more satisfactory in its results, producing a radical cure, and removes all foreign bodies at once. (Dr. Adams, p. 152.)

In acutely inflamed bursæ, enjoin rest, apply leeches, and cold lotions, and when the inflammation is sufficiently subdued, pass a bit of sewing silk through the centre of the cyst. (Mr. Richard, p. 154.)

KNEE-JOINT, *Bursal Disease of.*—When not communicating with a joint, they may be opened without danger in all situations and in every stage. The effect of seton is like that through a hydrocele or ranula, viz., the secretion is absorbed without being discharged by a wound, and the sac is obliterated. In a hard and consolidated form of the disease, it breaks down into a common abscess, which, when punctured, discharges its contents and heals. Pass the thread (common silk) through the centre of the tumor, and keep it in until the end is accomplished. If inflammation supervene, remove the thread, foment or poultice; when sufficient inflammation has been set up, which is indicated by the oozing of pus from the punctures, and may be continued four or five weeks. If the morbid bursa be too deep for the application of the above treatment, injection and pressure may be used.

For ganglions or adventitious cutaneous cysts, puncture with the lancet is a less painful and more certain remedy than a blow. Let the puncture be no larger than to evacuate the contents of the cyst. Bind down the part afterwards with a pad of lint and adhesive plaster, to promote the obliteration of the cyst. (Mr. Skey, p. 151.)

*Diseased Joints.—(Position and Support.)*—In joints of the lower extremities, first calculate well the position the most applicable (the straight being the most sightly and useful.) Use strong pasteboard or undressed leather as a splint, adapt it whilst wet, and pad with lint or jeweller's wool, and fit in such way to the limb as to be perfectly easy to the patient, at the same time giving steadiness to the limb, and let it extend sufficiently above and below the joint.

*Convalescent Treatment.*—Envelope the joint in splints of leather undressed with oil, first softened in water, and allow them to remain on so as to form an exact case for the joint, which, when hard, may be lined with soft washleather. Jeweller's wool may now be laid in various places to prevent pressure of the edges of the splint, and a firm roller applied to secure all parts equally. The joint is now ready for passive or active motion, as may be judged most advisable. (Mr. Brownless, p. 149.)

*Fractures of the Thigh.*—Mr. Bulley, of the Berkshire Hospital, uses an apparatus for the more efficient treatment of fracture of the thigh, which makes the extensile power by means of a foot piece moving on an endless screw, and divides the traction equally between the foot and the lower end of the fractured bone. Its advantages are—1st. Easily-regulated extension 2nd. Constant exposure to the eye of the surgeon. There is a lateral splint also connected with the upper part of the apparatus, so acted upon, as to prevent the bowed or excurvated appearance so frequently produced. (p. 142.)

*Fracture of Clavicle.*—The maintenance of the fragments immoveable, and the obtaining a regular callus, are procurable by Dessault's bandage rendered stiff with dextrine. Care is to be taken to guard the armpits and other parts against this stiffness by means of compresses or wadding. A tight flannel waistcoat next the skin is a good precaution. (M. Blandin, p. 158.)

*Fracture, Treatment of.*—To prevent pain and suffering, to place the parts in the most favourable condition for repair, and to prompt the normal shape and length of the limb, are the principles which must guide the surgeon in the treatment of fracture; and these indications are fulfilled by instant coaptation, and observing the utmost possible apposition. These observed, there is no necessity for local loss of blood or cold lotions. Firm support, guided by the above principles, will do all that is necessary to secure a sound limb. (Mr. Liston, p. 141.)

## AFFECTIONS OF THE SENSES.

SKIN DISEASES.—*Porrigo Scutulata.* (*Ringworm.*)—Shave the head, and apply one of the stronger acids to the part. The strong acetic answers best. It may be applied by means of a piece of sponge tied to a stick, and should only be used for a few minutes. Nothing more should be done for a week or ten days, when the crust produced by the acid should be separated with a pair of scissors, and if there be any appearance of the disease remaining, the acetic acid should be applied again; but if it present a healthy appearance, let it be well washed with soap and water, and a little olive oil applied every night. When all the vegetable organisms constituting the disease have been destroyed, then use a stimulating ointment, as the ung. creosote 3ss. to 3j. to the ounce of lard; or apply tincture of iodine by means of a camel's-hair brush; or the ung. hyd. biniodid., diluted with six parts of the ung. picis liquid; or a mixture of equal parts of sulphur and pitch ointment; or the carb. of potass ointment, 3ss. to 3i. to the ounce of lard. It is often useful to alternate some of these remedies; the head should also be washed three or four times a-day with a lotion of the sulphuret of potass dissolved in lime water, or with carbonate of potass dissolved in water, or with soft soap and water. Attend to the general health; if the child be of a delicate habit or scrofulous, give iron and tonics, quinine with infus. quassiæ, and a nutritious diet. All heating articles of diet are improper, also salted food; the diet should be plain, but nutritious. (Erichsen and Wigan, p. 245.)

*Porrigo.*—Avoid all unnecessary irritation, as soap, cold lotions, poultices, or narcotics. Do not shave the head, but cut the hair down as close as possible with scissors, first softening the crusts with hot water, and afterwards washing with half the yolk of a fresh egg and water, and drying with a very soft cloth. Use a sulphurous ointment combined with camphor or creosote ℈j. to ʒj. of lard. Wear a light linen or silk cap of a washing kind, and change the linings of hats, bonnets, &c., frequently. Internal treatment must be guided by common principles. (Mr. Startin, p. 236.)

*Porrigo Pudendi.*—Take a small bleeding from the arm (8 oz). Give calomel, gr. iv; ext. coloc. comp. gr. vi, statim; and every four hours two tablespoonfuls of the following mixture:—Potassæ nitrat., 3j.; magn. sulph., ʒj.; mist. camph., ʒvj. M. Lotio plumbi. to be kept constantly applied to the vulva. After some time the lead lotion may be replaced by one of two grs. to five of bichloride of mercury, and two to five minims of hydrochloric acid to aqua ʒj. Observe well the regulation of the bowels and dietary. (Mr. Evans, p. 247.)

*Acne.*—When the follicles are only loaded, use the flesh brush, but, if very large and unsightly, use mechanical means, as a needle, to empty them. If the suppurating points are numerous, order the vapour douche; mercury, and camphor ointment, white precipitate with camphor, or lime 3j., zinc ointment, ʒj., camphor, ℈j., or ioduret of sulphur, gr. xv. ad gr. xxx., lard, ʒj., or, hyd. bichlor, in almond emulsion, or quince seed mucilage; or, sodæ hyposulphitis 3j. ad 3ij., alum sulphat. 3j. ad 3ij., aq. ros. ʒviiss., aq. colognæ ʒss. for a lotion.

For the redness that remains on the nose after the eruption, apply nitric acid, pharmacopœia strength, but take it off immediately with blotting paper; or, you may use acetum cantharidis; both these at fortnightly intervals; or, puncture every large vascular trunk with a fine lancet.

Chalybeates, mineral acids, vegetable bitters, or iodine, arsenic, or mercury, if special organs require them. Alcoholic stimulants, if the stomach require, good air and exercise. (Mr. Startin, p. 240.)

*Sycosis.*—Extract the hairs with a pair of forceps; wash with yolk of egg and warm water, or fomentations of decoction of poppies, linseed,

&c., with a little sulphur or bran; or a sulphur vapour douche, applied by means of a steam-pipe to the face, excluding the nose; or, apply the following mild stimulating ointments, viz., hyd. precip. alb. gr. xv. ung. hydrarg. fort. 3j.; liq. plumbi acet. 3ss.; ol. palmi, recent, 3vj.; M. Give brisk acidulated saline purgatives, and, subsequently chalybeates. (M. Startin, p. 240.)

*Lepra, Psoriasis, Lupus, Acne, Eczema Chronica, Impetigo, Prurigo, Lichen.*—In the treatment of these and all chronic affections of the skin which are not venereal, nor dependent on local causes, first, reduce inflammatory action by depletion and antiphlogistic regimen; then administer arsenic, beginning with five minims of the liquor potassæ arsenitis thrice a-day, with the meals, until the conjunctiva is inflamed; afterwards reduce the dose to four minims, keeping the eyelids slightly sore and weeping. The whole success of this treatment (which seldom or never fails in any of the above diseases), depends upon the continued and persevering use of the medicine, which is perfectly harmless, when administered with vigilance under these restrictions. (Mr. Hunt, p. 247.)*

*Pityriasis, Herpes, Eczema.*—Use a lotion composed of one part of alum, and sixty-two parts of water.

In the slighter forms of acne, lichen, pityriasis, herpes, and even in eczema, use a simple acidulated lotion. In impetigo, after the crusts have fallen off, use the following application of alumina:—Alum, eight grammes; infusion of Provence roses, five hundred grammes. Gowland's solution, or Bateman's mercurial emulsion, however, answer very well. M. Cazenave uses the following:—Bicloride of mercury, ten centigrammes; hydroclorate of ammonia, ten centigrammes; almond emulsion 250 grammes; make a solution. In really chronic eczema he uses the following lotion:—Acid nitric, twenty-five drops; acid muriatic, twenty-five drops; distilled water, three hundred grammes. Mix by shaking. (Cazenave, p. 253.)

*Ichthyosis Fortuita.*—1st. Augment the action of the capillaries of the skin, by giving small doses of blue pill and emetic tartar; liquor arsenicalis; cantharides in decoction of rumex obtusifolius, made by boiling an ounce of the sliced root of the common dock in a pint of soft water; dose 3ij. 2ndly. Improve the secretions generally, by generous diet, as milk, vigorous exercise in the open air, &c. 3rdly. Aid the action of the two former by topical means which stimulate the skin, and assist the separation of the diseased papillæ by warm baths, friction, &c. (Dr. A. T. Thomson. p. 254.)

*Urticaria.*—Where arising from irritating ingesta, give emetics and purgatives. If from visceral disorders of other forms, pay especial attention to them. Where idiopathic, and without assignable cause, pay close attention to the skin, &c.: bleed when the pulse will admit, and give magnesian aperients, or iodide of potassium. Where the case is chronic, use liquor potassæ in large, or liquor potassæ arsenitis, in small doses. (Mr. Startin, p. 248.)

*Erysipelas.*—In some cases the following ointment may be used instead of the solid arg. nit. or the solution: nitrate of silver ointment in three strengths, viz.:—Nitrate, 12 parts, lard 32 parts; nitrate, 8 parts, lard 32 parts; nitrate, 4 parts, lard 32 parts. (M. Jobert, p. 254.)

*Stains from Nitrate of Silver, to remove.*—Moisten the spots several times with a solution of hydriodate of potash, and expose the part to the direct rays of the sun. The hydriodate converts the black stain of the nitrate into the white ioduret of silver. A trial of its use internally is also recommended in those cases where the skin has been tinted by the internal use of the nitrate. (Journal de Medicine, p. 254.)

EYE DISEASES.—*Syphilitic Iritis.*—Give turpentine 3j. three times a day in almond emulsion, using double the quantity of the confection. Thus

* See Mr. Hunt's papers on chronic diseases of the skin, Lancet, 1846, p. 32, 77, 125, 271, 385, 543, 597.

(Mr. Carmichael's formula): ℞. Olei terebinth. rectificat. ʒj., vitelli unius ovi simul, et adde gradatim, emulsionis amygd. ʒiv.; syr. cort. aurant., ʒij.; spt. lav. c. ʒiij. ol. cinnam. gtt. three vel. four. Misce, sumat cochlearia larga duo ter in die. If the inflammation run high, cup or leech the temple. This remedy alone is frequently successful, but in obstinate cases, mercury is the sheet anchor. (Dr. Jacob, p. 261.)

*Conjunctivitis, Iritis, &c.*—Dr. Laugier recommends a collyrium—made in a warm marble mortar—of two parts Venice turpentine, and one part oil of turpentine, added by degrees, in conjunctivitis, accompanied with slight tarsal affections, scrofulous corneitis, and conjunctivitis with corneitis. He instils three or four drops between the eyelids night and morning. The oil of turpentine may also be made into an ointment, but he prefers using the mixture. (p. 268.)

*Ophthalmia, Gonorrhœal.*—Apply the nitrate of silver in substance to the conjunctiva by exposing the conjunctival surface of the inferior eyelid, and drawing the caustic, pointed like a pencil, lightly across it. (Mr. Walker, p. 264.)

*Ptosis.*—Reserve in the use of direct depletion is commonly most in accordance with the principles of sound practice. But cupping, mercury, purgatives, dietary, blistering, and subsequently tonics, are productive of most decided advantage. (Mr. France, p. 265.)

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## TOXICOLOGY.

POISONS.—*Arsenic.*—Magnesia, not strongly calcined, is an excellent antidote to arsenious acid; it removes it entirely from a state of solution in water, and forms an insoluble compound. Magnesia in a gelatinous state answers best. Magnesia decomposes emetic tartar, the salts of copper, and corrosive sublimate, also the organic alkalies, morphia, strychnia, &c. (M. Bussy, p. 117.)

Dr. Christison recommends the light pure magnesia, which may be obtained in a gelatinous pulpy state, by adding a solution of caustic potash to a cold saturated solution of sulphate of magnesia, and washed afterwards with cold water. The dense magnesia has very little action on arsenic in solution. When the gelatinous cannot be obtained, then use the light calcined, in proportion of between thirty and fifty parts to one of arsenic taken.

[As in the hurry of these cases it is frequently difficult to know what quantity of arsenic has been taken, it must be left to the discretion of each practitioner to judge what quantity of the magnesia he shall administer as the antidote.—Ed.] (Dr. Christison, p. 117.)

*Mineral Poisons.*—Universal antidote:—First give a purgative, then a soap bath, and a mixture of persulphuret of iron and syrup, night and morning, in such quantities as to be always in excess in the intestines to prevent reabsorption. (MM. Sandras and Bouchardat, p. 324.)

*King's Yellow.*—The hydrated peroxide of iron acts as the best chemical antidote, combining with the arsenic in the stomach to form an arsenite of iron which has little solubility, and therefore of little energy as a poison. As the arsenic may be again set free by the secretions of the stomach, take care to give the peroxide in excess, and repeatedly, until all effects subside. (Dr. Patterson, p. 119.

*Laudanum.*—Make use of electro-magnetism. The wires to be applied in turn to every part of the body, and the patient to be roused and kept awake. It may be continned for four hours, and may gradually become more susceptible and energetic in the limit until the end of the period stated, when there may be satisfactory revival. (Dr. Barry, p. 113.)

## MATERIA MEDICA AND GENERAL THERAPEUTICS.

ATROPIA AND BELLADONNA.—Make a solution of one, two, or three grains of atropia to ℥j. of distilled water; add a drop of nitric acid to render it soluble, and a drop of spt. vini, to make it keep. Introduce a drop of one of these solutions between the eyelids, which will keep the pupil dilated from four to ten days, according to the strength of the solution used.

It may be useful in iritis; aquo capsulitis; also when it is wished to break up recent adhesions between the iris and lens; to withdraw a protruding iris from its position; in central cataract; or in central opacity of the cornea, where the pupillary margin is attached to the back of the cornea, &c. Its use is less marked when conjunctivitis is present, than in a healthy eye, and its effects are more evanescent.

In ulcers of the cornea, belladonna is of special service; by it synechia anteria, &c., may be prevented. In cases of rupture from ulceration, with hernia of the iris, apply the solution of atropia close to the eyelids, and keep them closed with plaster; smear the eye and brow with the extract of belladonna, and, if necessary, use leeches to the temples, just over the malar bone; apply blistering, and use such constitutional treatment as is calculated to subdue inflammation, and the further spread of the sloughy or ulcerating process.

In neuralgic affections of the eye, intermitting and unattended with inflammation, or obvious alteration in the structure, or motion of the organ—try belladonna internally, from one-sixteenth to one-sixth of a gr. in solution three times a day. In old and inveterate photophobia or ophthalmia, attended with vascular cornea, in discharged soldiers, the internal use of belladonna is marked. (Mr. Wilde, p. 258.)

AMPUTATION *of the Thigh.*—Mr. Syme says he is now satisfied that there are circumstances in which the circular incision ought to be preferred. The perfect condition of the stump, where there is nothing but integuments to protect the bone, as at the ankle, led him to conclude, that if the circular operation could be performed with the certainty of providing such a covering, it might be employed with advantage in the lower third of the thigh. There is plenty of skin and plenty of room to employ the tourniquet, without impeding the incisions or retraction of the muscles, and the size of the wound is much smaller than at the middle of the thigh. Apply the tourniquet close to the groin; use a middle-sized knife, such as is employed for the flap operation. Make the incision of the skin as near the knee as possible; not in a circular direction, but so as to form two semilunar edges, which may meet together in a line, from side to side, without projecting at the corners, and divide the fascia with the integuments. Draw these up by firmly clasping the limb, and not by dissecting and turning back. Divide the muscles by a circular sweep of the knife down to the bone, and retract with the utmost care. This should be at least two inches; and, before using the saw, protect the muscles, and freely expose the bone by means of a split cloth.

Mr. Syme adds, as the soft parts required to form the stump in amputation at the knee, are apt to be so deranged in their texture, as to delay, though not prevent recovery, and thus in some measure counterbalance the advantage of exposing the cancellated instead of dense bone, together with the contents of the medullary cavity, "I do not persist in advocating amputation at the knee, now when satisfied that the operation by circular incision, if performed with due care on proper principles, may be employed at the lower third of the thigh safely and advantageously." (Professor Syme, p. 155.)

In amputation, Mr. Quain makes the flaps short in the first instance, and adds to their length, subsequently, by circular incisions through the deeper muscles. Modifications are, however, required, according as the parts to

be amputated are not clothed with muscle, e.g., the leg and fore-arm. (Mr. Quain, p. 158.)

FLAP AMPUTATION.—The disadvantages of flap amputation are—1. It is more painful from the extent of integument divided, and oblique division of nerves. 2. More protracted in its performance, in consequence of the difficulty of obliquely cut arteries collapsing. (Mr. Bulley, p. 158.)

REFLECTING PRISM, *and Tube for Exploring the Open Passages*.—Used for 1st. The vagina, &c., for polypi; for ulcerative, and other diseases, both of the vagina and uterus, and preternatural labour. 2d. The rectum; for stricture, hæmorrhoids, &c. 3d. Urethra and bladder; in lithotrity, lithotomy, and stricture. 4th. The pharynx, larynx, and eustachian tube; for diseases of these passages. 5th. The nose; for ulcer, ozœna, polypus. 6th. The stomach itself! 7th. Gunshot wounds, &c.; where bodies lodge and require extraction. (Warden and Avery, p. 324.)

ULCERS.—Give turpentine in those ulcers which are prevented healing by deficient action, where the ulcer is sluggish, surface smooth, without granulation, or of a greenish foul appearance; discharge serous, edges rounded, smooth, and callous, and the surrounding skin is pink or blue. It should not be exhibited where the patient is plethoric, the ulcer inflammatory, and the pulse full and frequent, or where it produces nausea, or other unpleasant symptoms; in the last case substitute cajeput oil, three drops three times a-day, or give the capsules of Messrs. Evans and Lescher, each containing twenty to twenty-five drops of the turpentine. Continue the use of the turpentine until good healthy granulations appear, with the secretion of good pus. (Mr. Hancock, p. 321.)

MOIST HEAT, *Application of*.—Mr. Markwick, of the Western German Dispensary, has invented a fabric of sponge and wool, which he calls "Spongio-piline," which, by being impregnated with the required epithem, proves a substitute for poultices and fermentation cloths.

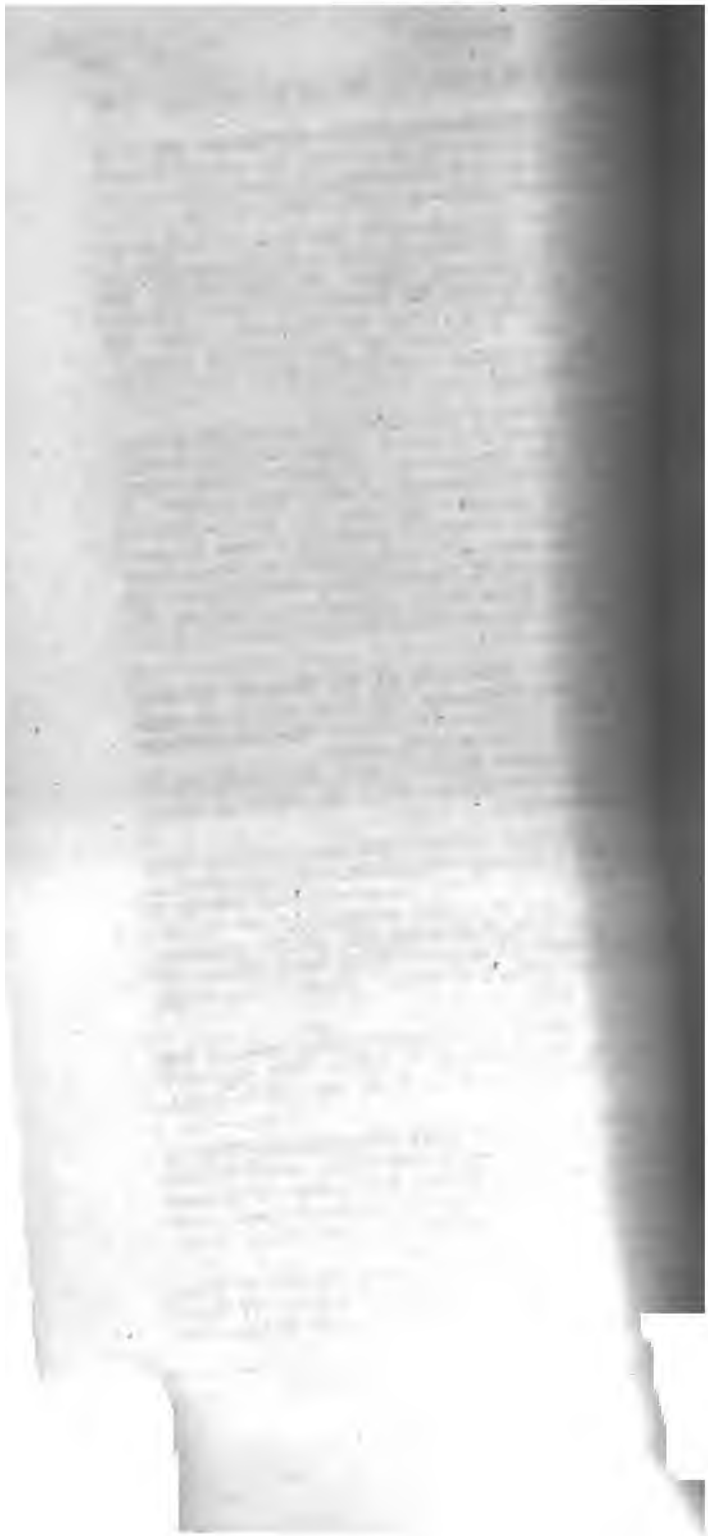
The "Impermeable piline" is another fabric of wool, &c., backed with India-rubber, and recommended where protection to the skin and joints, or increased diaphoresis, is necessary.

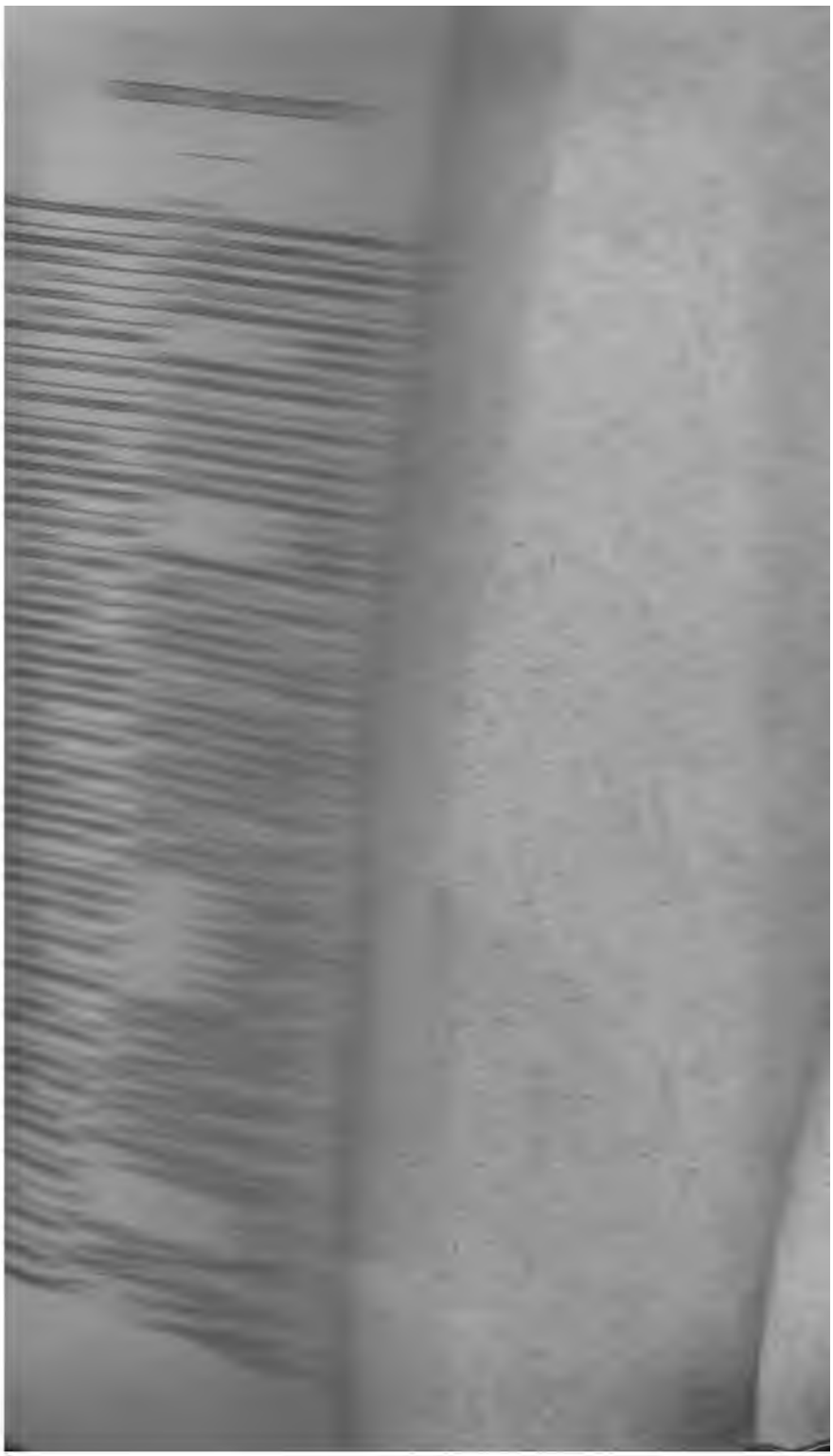
PLASTERS.—New mode of preparing adhesive and strengthening plasters.—India-rubber in fine shreds, 5 lbs.; spt. turpentine, sufficient to cover, and added as the substance absorbs it. When dissolved, press through a fine sieve. Heat four ounces of Cayenne pepper in a quart of spt. turpentine, and with a portion of it, grind 1 lb. of litharge, mix in the remainder afterwards, and add 6 oz. bals. Peru. Then melt 1 lb. of India-rubber, and add spt. turpentine until it is thin enough to strain. Finally, mix all the preceding together. (Chemist, p. 324.)

BED SORES.—Thicken the cuticle, by using a stimulating wash, as follows:—Hyd. bichlorid. gr. ij.; sp. vini tenuoi. ℥j. ft. lotio. This may also be applied to the skin, against which a very powerful truss is to press. (Sir B. Brodie, p. 325.)

VAPOUR BATH.—Cheap substitute for one more complicated.—Take a piece of quick lime, the size of the fist: wrap it round with a well wetted cloth or flannel; then, to prevent its wetting the bed, with a dry one doubled in folds. One may be placed on each side, and one at the feet, and when sweating is fully established, they may be withdrawn. Hot fluids or increased covering is unnecessary. (Dr. Serre, p. 140.)

MERCURY, *Mode of Administering to Children*.—Smear a drachm or more of strong mercurial ointment on a flannel roller, and apply it not very tight, round the knee. Repeat it daily. The motions of the child produce the necessary friction. (Sir B. Brodie, p. 133.)





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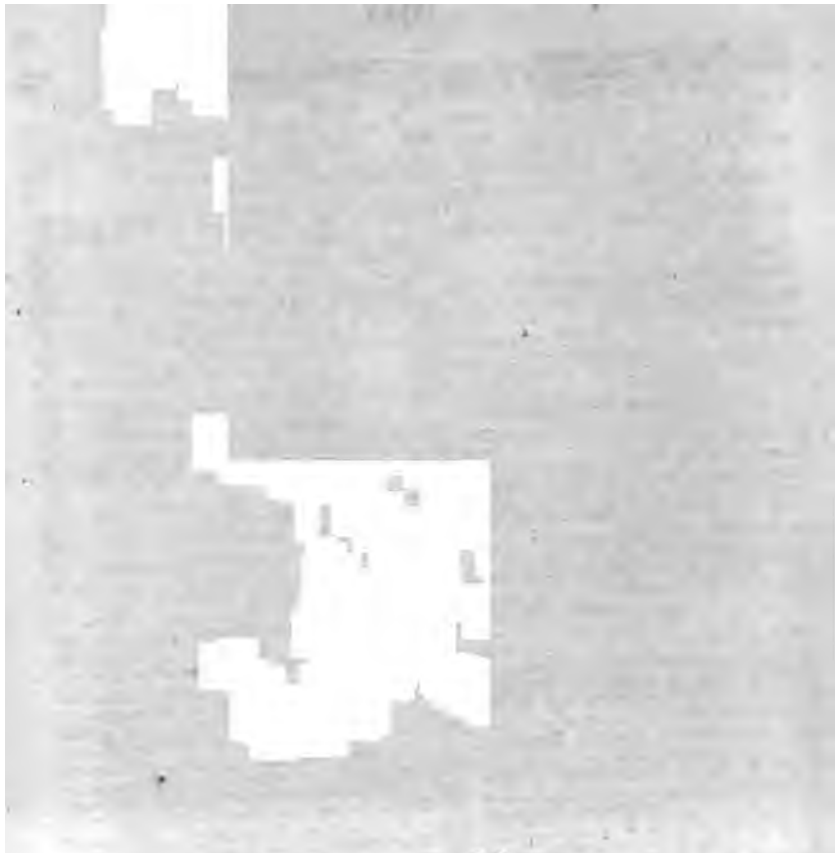

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